

REDACTED VERSION

SCREENING SITE INSPECTION REPORT

of

CABOT LANDFILL

(ARD983269275)

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**SCREENING SITE INSPECTION
of
CABOT LANDFILL (ARD983269275)**

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1.0 INTRODUCTION

The Region 6 ARCS Contractor, MK-Environmental Services and ICF Technology (MK/ICF), was tasked by the U.S. Environmental Protection Agency (EPA) under ARCS Contract No. 68-W9-0025 and Work Assignment No. 30-6JZZ to complete the Screening Site Inspection (SSI) of Cabot Landfill, (ARD983269275) in Cabot, Lonoke County, Arkansas, originally tasked under Technical Directive Document (TDD) F06-9002-16 to the Region 6 Field Investigation Team (FIT). The MK/ICF Task Manager relied on the information provided by the previous FIT Task Manager to finish this task. Additional data collection was conducted on a limited basis.

1.1 SCREENING SITE INSPECTION OBJECTIVES

The SSI evaluates the potential risks associated with hazardous waste generation, storage and disposal at the site. It expands upon data collected during the Preliminary Assessment (PA) and identifies data gaps. Information obtained during the SSI supports the management decision of whether the site proceeds to the Expanded Site Inspection (ESI) or receives the classification of No Further Action under the Superfund Amendments and Reauthorization Act (SARA).

2.0 SITE DESCRIPTION AND OPERATIONAL HISTORY

This section addresses site location, operational history, source characterization, potential alternate sources and past or current regulatory status of the site.

2.1 SITE LOCATION

The Cabot Landfill is located ¼ mile west of the northern end of Willie Ray Road in Cabot, Lonoke County, Arkansas. The legal description of the landfill property is Lot 1, Lot 2 and the southwest quarter of Lot 5 of Section 6, Township 4 North, Range 9 West (Ref. 42). The geographical coordinates are 34°59'45" north latitude and 92°01'00" west longitude (Ref. 1, p. 1) (Figure 1). A potential hazardous waste site identification form, EPA Form 2070-8, was completed as a result of a citizen's complaint (Ref. 15). The citizen stated that the landfill had received wastes from the Vertac Superfund Site in Jacksonville, Arkansas (Ref. 15; Ref. 16; Ref. 17).

2.2 OPERATIONAL HISTORY

The landfill was primarily used for the disposal of domestic, commercial and industrial wastes. The landfill also received and disposed of used tires. The site was expanded via purchase of private holdings by the City of Cabot in December 1977 (Ref. 2, p. 3) (Figure 2). The City of Cabot owns 118.25 acres of which 14.9 is permitted to be used as a landfill (Ref. 1, p. 1; Ref. 5, p. 1; Ref. 42). The State of Arkansas Commission on Pollution Control and Ecology permitted 6.4 acres for landfill use on July 25, 1975 and approved an additional 8.5 acres on March 16, 1981 (Ref. 1, p. 1; Ref. 5, p. 1). A State inspection conducted on June 24, 1980 found that the landfill had extended beyond its permitted or approved boundaries (Ref. 34, p. 4). There is no documentation available as to the extent the landfill has exceeded its 14.9 acres permitted boundary.

Cabot Landfill was cited by the Arkansas Department of Pollution Control and Ecology (ADPC&E) for exceeding permitted boundaries, leachate problems, and overall "poor housekeeping" (Ref. 34). An ADPC&E inspection on February 18, 1981 revealed thirty-four 55-gallon drums on-site

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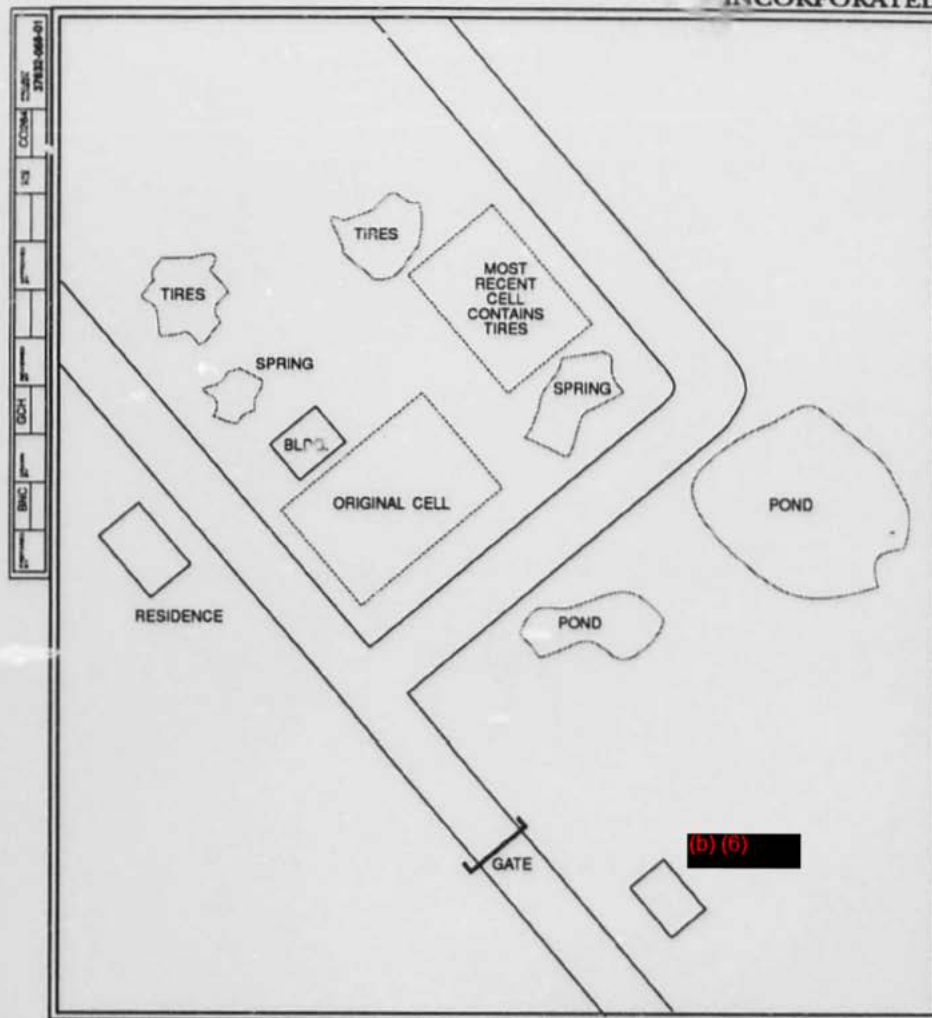
FIGURE 1
SITE LOCATION MAP
CABOT LANDFILL
CABOT, ARKANSAS.

CERCLIS #ARD983269275



QUADRANGLE LOCATION
CABOT ARK 1987
MOUNTAIN SPRINGS ARK 1981
OAK GROVE, ARK 1982
BEEBE, ARK 1981

ICF TECHNOLOGY
INCORPORATED



N
NOT TO SCALE

Reference:
Ecology & Environment
FIT Site Investigation Workplan

FIGURE 2
SITE SKETCH
CABOT LANDFILL
CABOT, ARKANSAS.

CERCLIS #ARD983269275

QUADRANGLE LOCATION
CABOT 1967
MOUNTAIN SPRING 1981
OAKGROVE 1982
BEEBE 1981

(Ref. 34, p. 1; Ref. 39, p. 1). The majority of the drums were labeled paint stripper and several drums were bulging at the ends (Ref. 39, p. 1). The drums were addressed to be shipped to Falcon Jet of Little Rock, Arkansas. One drum was labeled Dreamline Manufacturing, Cabot, Arkansas. Two drums of Penwalt E-Z Strip were resting on their sides and leaking. There was also one drum of adhesive that had been leaking (Ref. 39, p. 1). The drums were removed from the landfill by the depositor at the request of the City of Cabot (Ref. 7).

A resident near the landfill stated that there is an abandoned well beneath the landfill. He also claimed that there are springs located in the landfill. The well is plugged and is not located in either of the landfill's cells (Ref. 7).

Wastes disposed at the site were supposed to have been covered daily with 6 inches of compacted soil. A final cover consisting of 2 feet of compacted clay and 4 inches of topsoil was to be applied and seeded at closure. The landfill was 75% closed by December 22, 1986. Final closure was scheduled for September 15, 1987 by the ADPC&E (Ref. 1, p. 1; Ref. 40).

A PA report was prepared by Ecology and Environment, Inc. (E&E) for the EPA under Technical Directive Document (TDD) F06-9009-14, on October 31, 1991 (Ref. 1, p. 1). The on-site reconnaissance inspection for completion of the SSI was conducted January 26, 1991. The FIT team included Michael Watson, Team Leader, and Julie Koke, Site Safety Officer of E&E. They were accompanied on-site by Andy Dedman, Public Works Supervisor, City of Cabot, Arkansas. (b) (6), a local resident, was interviewed and consented to have his well sampled during the sampling investigation.

The site was easily accessible and not restricted by vegetation or debris. The landfill is in a remote area and is not fenced or guarded. The landfill entrance road is blocked by a gate. The ground cover is thick and healthy. Stressed vegetation was not noted anywhere on-site. The FIT did not detect any noticeable odors. Bridging appears to have occurred on-site with the resultant collapse at some time in the past (Ref. 46).

2.3 SOURCE EVALUATION

The only documented source at the City of Cabot Landfill is the landfill itself. The landfill consisted of two cells and the permitted capacity was 14.9 acres (Ref. 1, p. 1). The City of Cabot was cited for numerous violations by the ADPC&E for placing waste outside of the permitted area; the actual area that received wastes is not known. There is no documentation stating whether the cells of the landfill were lined, and the City of Cabot Landfill has a history of "poor housekeeping" (Ref. 34). There are two leachate springs originating from below the landfill (Figure 2). These springs feed into two drainage ditches that eventually feed into Four-mile Creek (Ref. 11). Sampling of both the sediments and water from these leachate seeps indicated the presence of hazardous constituents, including polynuclear aromatic compounds, emanating from the landfill (Tables 1 and 2) (Appendix A). The landfill is covered by a 2-foot compacted clay cap; however, during the on-site reconnaissance the FIT noted places where the landfill cap had bridged and collapsed causing breaks or depressions in the cap surface. In addition to the landfill, three other potential on-site sources exist; two tire waste piles and an on-site pond. The tire piles are marked on a site sketch contained in the on-site reconnaissance log book prepared by Ecology and Environment, Inc.; however, no other information regarding the tire piles exist (Ref. 43). Two on-site ponds are present at the landfill. Documentation suggests the ponds are used as stock ponds and that deer typically utilize the ponds as a water source.

TABLE 1
SOURCE SAMPLES: SOIL ANALYTICAL RESULTS
(All Concentrations are Expressed in Parts Per Million)

Contaminant	S-06 (Background)	S-03 (Spring No. 2)	S-01 (Spring No. 1)	S-05 (Spring No. 1, Duplicate)	S-07 (Stock Pond)
Copper	6.10	26.10	18.70	8.20	4.9
Cyanide	ND	2.00	ND	ND	0.20
Chlorobenzene	ND	ND	.003 ^J	.007 ^J	ND
Calcium	264	1,450	715	790	1,150
Iron	31,300	94,000	32,500	40,400	22,800
Magnesium	355	775	1,090	871	638
Xylene	ND	ND	ND	.002	ND
Naphthalene	ND	.043 ^J	ND	ND	ND
Phenanthrene	ND	.39 ^J	ND	ND	ND
Anthracene	ND	.091 ^J	ND	ND	ND
Fluoranthene	ND	.48 ^J	ND	ND	ND
Pyrene	ND	.46 ^J	ND	ND	ND
Benzo(a)anthracene	ND	.19 ^J	ND	ND	ND
Chrysene	ND	.21 ^J	ND	ND	ND
Benzo(b)fluoranthene	ND	.15 ^J	ND	ND	ND
Benzo(k)fluoranthene	ND	.17 ^J	ND	ND	ND
Benzo(a)pyrene	ND	.17 ^J	ND	ND	ND
Indeno(1,2,3-cd)pyrene	ND	.12 ^J	ND	ND	ND

ND Not Detected

J Estimated Concentration due to TCL less than CRQL, or TCL with QA/QC out of control limits

2
1
0
4

TABLE 2

SOURCE SAMPLES: WATER ANALYTICAL RESULTS

(All Concentrations are Expressed in Parts Per Million)

Contaminant	W-01 (Spring No. 1)	W-05 (Spring No. 1, Duplicate)	W-03 (Spring No. 2)	W-07 (Stock Pond)
Iron	15.5 ^J	17.0 ^J	56.3 ^J	4.22 ^J
Magnesium	17.9	17.9	.11600	3.47
Chloroethane	.007 ^J	.011	ND	ND
Carbon Disulfide	.003 ^J	ND	ND	ND
1,1-Dichloroethane	.003 ^J	.004 ^J	ND	ND
Benzene	ND	ND	.008 ^J	ND
Phenanthrene	ND	ND	.003 ^J	ND
Fluoranthene	ND	ND	.003 ^J	ND
Pyrene	ND	ND	.002 ^J	ND
Benzo(a)anthracene	ND	ND	.001 ^J	ND

ND Not Detected

J Estimated Concentration due to TCL less than CRQL or TCL with QA/QC out of control limits

2.4 POTENTIAL ALTERNATE SOURCES

There are three RCRA facilities located within the 4-mile radius of the facility (Ref. 19). No CERCLA or National Priorities List (NPL) facilities were identified within a 5-mile radius (Ref. 13; Ref. 26; Ref. 29).

2.5 REGULATORY STATUS/ACTIVITIES

Between February 1981 and September 1985, the ADPC&E cited Cabot Landfill for numerous violations, including unsatisfactory final cover; leachate observed at the site; leachate entering a water course; improper handling of special waste; operation did not correspond with engineering plans; access not limited to operating hours; unsatisfactory access roads; evidence of open burning, waste not confined to manageable areas; improper spreading of waste; improper compacting of waste; unsatisfactory daily cover; unsatisfactory intermediate cover; improper drainage; unapproved salvaging of wastes; permit not posted at site; accepting unapproved wastes; unsatisfactory litter control; inadequate records; and dumping waste into water (Ref. 34, pp. 1 - 14). The landfill was scheduled for final closure on September 15, 1987 by the ADPC&E (Ref. 40). A potential hazardous waste site identification, EPA Form 2070-8, was completed for this facility on September 6, 1990 (Ref. 15). A PA report was prepared by E&E for the EPA under TDD Number F06-9009-14, on October 31, 1991 (Ref. 1, p. 3).

3.0 ANALYTICAL RESULTS

3.1 PREVIOUS ANALYTICAL RESULTS

There were no analytical results within the site files that were reviewed by the previous FIT Task Manager.

3.2 SAMPLING METHODOLOGY

All field activities were conducted in accordance with FIT Sampling Standard Operating Procedures. Sampling occurred on March 5, 1991. The sampling team consisted of Michael Watson, Team Leader; Lana Robinson, Site Safety Officer; and team members, Lonnie Gilley, Greg Straughn, and Kurt Soutendijk of E&E. The sampling team was accompanied by Andy Dedman, Public Works Supervisor, City of Cabot, Arkansas.

Seven soil, seven surface water and four drinking water samples were collected. Samples were analyzed using Routine Analytical Services (RAS) for full Target Compound List (TCL) and Target Analyte List (TAL) compounds and cyanide. The sampling locations and rationales are depicted in Figure 3 and Table 3.

Soil and surface water samples were shipped for overnight delivery via Federal Express to the appropriate Contract Laboratories Program (CLP) laboratories. Drinking water samples were shipped to the EPA Laboratory in Houston, Texas.

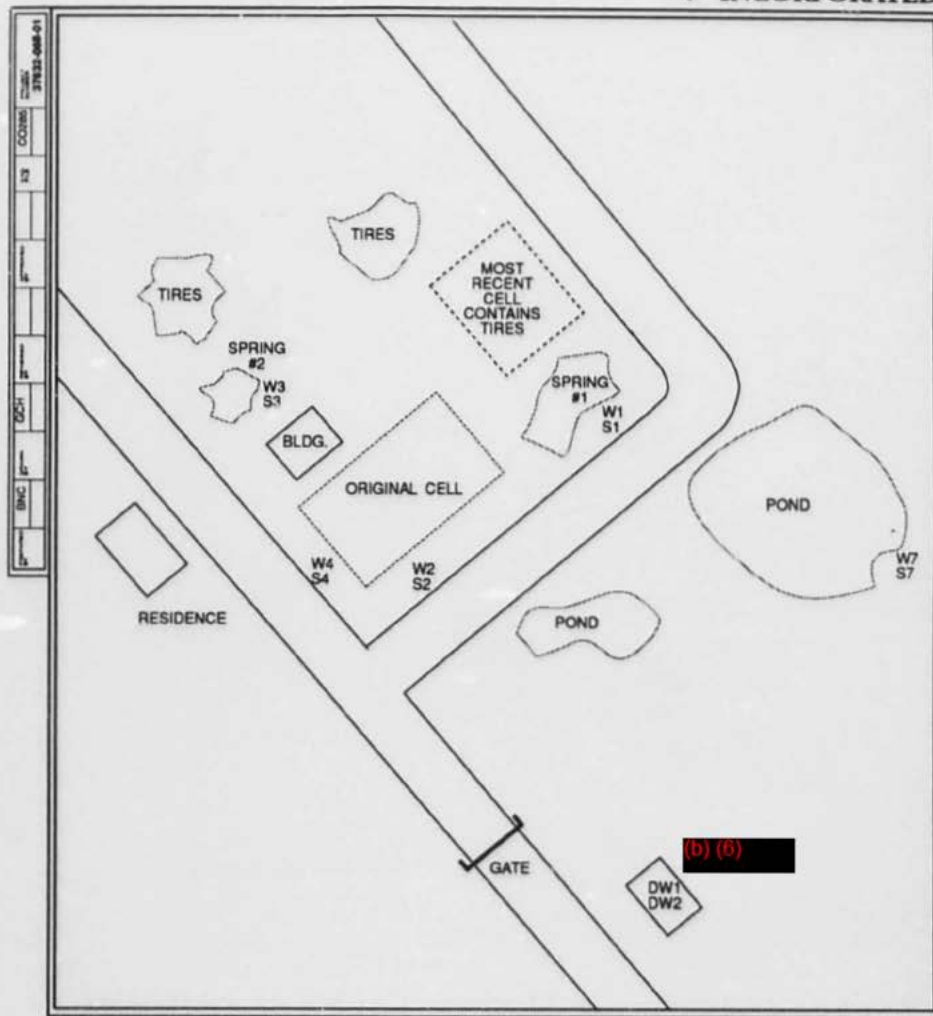


FIGURE 3
SAMPLE LOCATION MAP
CABOT LANDFILL
CABOT, ARKANSAS.

LEGEND:

- S - SOIL SAMPLE
- W - WATER SAMPLE
- DW - DRINKING WATER SAMPLE

N
NOT TO SCALE

Reference:
Ecology & Environment
FIT Site Investigation Workplan

CERCLIS #ARD983269275

3.3 SSI ANALYTICAL RESULTS

Source Soil Samples

Inorganic analysis of the soil samples from Spring No. 1 (S-01 and S-05) and Spring No. 2 (S-03) indicated the presence of high concentrations of inorganic constituents; however, due to high background concentrations (S-06), only the following compounds were detected at concentrations greater than three times background: copper, calcium and magnesium in Sample S-01; calcium in Sample S-05; and copper, cyanide, calcium and iron in Sample S-03 (Table 1) (Appendix A).

Organic analysis of the soil samples from Spring No. 1 (S-01 and S-05) and Spring No. 2 (S-03) indicated the presence of numerous organic constituents. The following compounds were detected at concentrations greater than three times background. Naphthalene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)fluoranthene, and indeno(1,2,3-cd)pyrene were detected in Sample S-03 and chlorobenzene was detected in Samples S-01 and S-05 (Table 1) (Appendix A). Methylene chloride, numerous phthalates and acetone were also detected in the samples; however, they are common laboratory contaminants and the presence of these compounds in the samples are suspect. All concentrations of organic constituents are considered estimates due to the fact that concentrations are above Instrument Detection Limits (IDL) but below Contract Required Quantitation Limits (CRQL).

Source Water Samples

Inorganic analysis of the water samples from Spring No. 1 (W-01 and W-05) and Spring No. 2 (W-03) indicated the presence of inorganic constituents; however, this may be due in part to regional, elemental concentrations in both soils and water (Table 2). No background levels are required for source samples; however, due to the high concentrations of inorganic constituents in native soils and in the background sample, the water samples were compared to the sample taken from the on-site stock pond (W-07). The following compounds were detected greater than three times background: iron and magnesium in Samples W-01 and W-05 from Spring No. 1, and iron in Sample W-03 taken from Spring No. 2.

Organic analysis of the water from Spring No. 1 (W-01 and W-05) and Spring No. 2 (W-03) indicated the presence of numerous organic constituents. The following compounds were detected: carbon disulfide and 1-1 dichloroethane in Samples W-01 and W-05; and benzene, phenanthrene, fluoranthene, pyrene, and benzo(a)anthracene in Sample W-03 (Table 2) (Appendix A). Methylene chloride, numerous phthalates and acetone were also detected in the samples; however, they are common laboratory contaminants and the presence of these compounds in the samples is suspect. All concentrations of organic constituents are considered estimates due to the fact that reported concentrations are above IDL but below CRQL.

Stock Pond

Two samples (S-07 and W-07) were collected from the on-site stock pond to determine if hazardous constituents in the landfill leachate were migrating to the pond. Analysis of the sediments from the pond revealed only the presence of cyanide at low concentrations in the pond. Cyanide was also present in the soil from Spring No. 2; however, review of analytical data revealed the presence of cyanide in water samples as a possible laboratory contaminant.

Ground Water Pathway Samples

Four ground water samples were collected to determine if potential contaminants from the landfill were impacting ground water (Table 4). A sample and a duplicate were collected from the well belonging to (b) (6) (DW-01 and DW-02). Duplicate results were within Quality Assurance/Quality Control (QA/QC) guidelines of each other. A background sample was taken from the (b) (6) well (DW-03). A trip blank (DW-04) was also collected. Review of the analytical data indicated the presence of metals in Samples DW-01, DW-02 and the Trip Blank. No inorganic constituents were detected in the background sample (DW-03). No organic constituents were detected in any of the ground water samples. Due to the regional levels of inorganic constituents, it is unlikely that the background groundwater sample is devoid of detectable inorganics. It is also unlikely that a trip blank consisting of deionized water would have high levels of inorganic constituents. A possible explanation for this discrepancy could be that the background and trip blank samples were inadvertently switched in the field or the laboratory. Due to the limited amount of available documentation, it is impossible to determine if this error was a result of field activities or laboratory activities. An observed release to ground water cannot be documented either by using DW-04 as the background sample, because residential well sample concentrations are not greater than three times the background sample, or by using DW-03 as the background sample, due to possible blank contamination in the residential well samples.

Surface Water Overland Flow Samples

Five samples were collected from on-site drainage pathways to determine if contaminants from the landfill were migrating along the overland flow portion of the surface water pathway. Soil and surface water samples were collected from the drainage ditches where the leachate from the springs flowed and surface water runoff from the landfill flowed. Two samples (S-02 and W-02) were collected along the west drainage path that receives the leachate from Spring No. 1, and two samples (S-04 and W-04) were collected along the south drainage path that receives leachate from Spring No. 2 (Table 5).

Numerous organic and inorganic constituents were detected in the soil samples collected from the drainage streams. High concentrations of inorganic constituents were detected in the background soil sample, S-06 (Table 5) (Appendix A). The following compounds were detected at concentrations greater than three times background in Sample S-02: calcium, manganese, benzoic acid, fluoranthene and pyrene. Calcium, iron, manganese, zinc, chlorobenzene, cyanide, phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(a)fluoranthene and alpha chlordane were detected at three times background in Sample S-04.

No significant concentrations of organic and inorganic constituents were detected in the surface water samples. Methylene chloride, numerous phthalates and acetone were also detected in the samples; however, they are common laboratory contaminants and the presence of these compounds in the samples is suspect. All concentrations of organic constituents are considered estimates due to the fact that reported concentrations are above IDL but below CRQL.

4.0 PATHWAY ASSESSMENT

This section characterizes the environmental pathways and associated targets of potential contaminant migration from the facility.

TABLE 3
SAMPLE LOCATIONS AND RATIONALE

Station Number	Sample Description and Rationale
W1	Spring No. 1. <u>Rationale:</u> To characterize soluble contaminants at source.
W2	Stream No. 1. <u>Rationale:</u> To identify any soluble contaminants that are capable of migration from the source. Downgradient.
W3	Spring No. 2. <u>Rationale:</u> To characterize soluble contaminants at source.
W4	Stream No. 2. <u>Rationale:</u> To identify any soluble contaminants that are capable of migration from the source. Downgradient.
W5	Spring No. 1. <u>Rationale:</u> Duplicate of Spring No. 1.
W6	Trip Blank. <u>Rationale:</u> QA/QC control.
W7	Stock Pond. <u>Rationale:</u> To determine if the pond has been subjected to leachate contamination.
S1	Spring No. 1. <u>Rationale:</u> At source. To characterize the source.
S2	Stream No. 1. <u>Rationale:</u> Downgradient. To determine if there has been any migration of contaminants from the source.
S3	Spring No. 2. <u>Rationale:</u> At source. To characterize the source.
S4	Stream No. 2. <u>Rationale:</u> Downgradient. To determine if there has been any migration of contaminants from the source.
S5	Duplicate of S1, located in Spring No. 1. <u>Rationale:</u> Duplicate of S1.
S6	Background. <u>Rationale:</u> To determine regional background concentration.

TABLE 3
SAMPLE LOCATIONS AND RATIONALE
(Continued)

Station Number	Sample Description and Rationale
S7	Stock Pond. <u>Rationale:</u> To determine if the pond has been subjected to leachate contamination.
DW1	Domestic Well. <u>Rationale:</u> (b) (6). To determine whether contamination exists at a drinking water target.
DW2	Domestic Well. <u>Rationale:</u> Duplicate of DW1.
DW3	Domestic Well. <u>Rationale:</u> (b) (6) well. To be used as a background sample.
DW4	Trip Blank. <u>Rationale:</u> QA/QC control.

S - Soil Sample
W - Water Sample
DW - Drinking Water Sample

TABLE 4

GROUND WATER PATHWAY SAMPLES: ANALYTICAL RESULTS

(All Concentrations are Expressed in Parts Per Million)

Contaminant	DW-03 (Background)	DW-04 (Trip Blank)	DW-01 (R.C. Hinson)	DW-02 (R.C. Hinson, Duplicate)
Aluminum	ND	ND	.28900	.27900
Barium	ND	.025	.11400	.11400
Calcium	ND	5.78	8.94	8.95
Magnesium	ND	8.72	6.75	6.76
Manganese	ND	.647	.21700	.21700
Zinc	ND	.074	.06100	.059
Iron	ND	1.97	.571	.5920

ND Not Detected

TABLE 5

SURFACE WATER PATHWAY SAMPLES: ANALYTICAL RESULTS
(All Concentrations are Expressed in Parts Per Million)

Contaminant	Water		Soil/Sediment		
	W-02 (Stream No. 1)	W-04 (Stream No. 2)	S-06 (Background)	S-02 (Stream No. 1)	S-04 (Stream No. 2)
Calcium	14.20	45.40	264	2,290	2,210
Iron	.13200 ^J	8.46 ^J	31,300	14,500	243,000
Magnesium	5.87	12.80	355	672	821
Manganese	.1320	6.47	674	2,040	2,480
Chlorobenzene	ND	.001 ^J	ND	ND	.004 ^J
Zinc	ND	ND	24.70	62.30	96.90
Cyanide	ND	ND	ND	ND	1.6
Benzoic Acid	ND	ND	ND	1.5 ^J	ND
Phenanthrene	ND	ND	ND	ND	.017 ^J
Fluoranthene	ND	ND	ND	.068 ^J	.24 ^J
Pyrene	ND	ND	ND	.080 ^J	.24 ^J
Benzo(a)anthracene	ND	ND	ND	ND	.012 ^J
Chrysene	ND	ND	ND	ND	.013 ^J
Benzo(b)fluoranthene	ND	ND	ND	ND	.011 ^J
Alpha Chlordane	ND	ND	ND	ND	.015 ^J

ND Not Detected

^J Estimated concentration due to TCL less than CRQL, or TCL with QA/QC out of control limits

4.1 GROUND WATER PATHWAY

4.1.1 Ground Water Characteristics

The site is physiographically situated in a divisional area of the two major provinces of Arkansas; the Interior Highland Province and the Coastal Plain Province. The transition zone between the highlands and the plains is called the Fall Line (Ref. 9, p. 3). The principal hydrologic unit considered to underlie the site is the undifferentiated Tertiary deposits (Ref. 9, pp. 5 and 6, Plate 1). The undifferentiated Tertiary deposits are comprised of sandy clays with channel fillings of clean sand (Ref. 9, p. 7). A well log identified within a 1-mile radius of the facility indicates that there is a surficial strata of clay approximately 80 feet in depth (Ref. 36, p.1). Depth to ground water is approximately 25 feet, and the well produces approximately 50 gallons per hour. Soil borings taken from on-site indicate that the first 10 feet of soil underlying the facility is composed of clay with seams of shale (Ref. 5, p. 3). The Midway Formation is the predominant unit underlying the undifferentiated Tertiary deposits (Ref. 8, Figure 3.0-1; Ref. 9, pp. 8, 10). It is comprised predominantly of clay and generally produces no water and is considered a clay confining layer in the area of the facility (Ref. 8, Figure 3.0-1). The net precipitation for the Cabot to North Little Rock, Arkansas area is 21.04 inches (Ref. 33).

4.1.2 Ground Water Receptors

There are no municipal or public supply wells located within a 4-mile radius of the facility (Ref. 11; Ref. 20; Ref. 21; Ref. 23; Ref. 24; Ref. 25). The City of Cabot supplies water to the residents of Cabot, Mountain Springs, and some residents south of Cabot. The City of Cabot receives a portion of its water from two municipal wells located outside the target distance limit (Ref. 21). The City of Austin purchases water from the City of Ward and serves residents of Austin and adjacent rural areas (Ref. 20). The City of Ward supplies water to the residents of Ward from municipal owned wells, the City of Ward wells are located outside the target distance limit (Ref. 23). There are three rural water districts serving residents within the Four-mile Creek target distance limit: Grand Prairie, Bayou II and Highway 319 Water Supply Company (Ref. 11; Ref. 24). These rural water districts purchase their water from other water companies or have wells outside the target distance limit (Ref. 24). Not all residents within the 4-mile radius are on a public supply, according to Mr. Guthrie, City of Cabot Water Department; there are at least 100 homes within the target distance limit not supplied by a municipal or public source (Ref. 21; Ref. 24; Ref. 25). A well survey conducted by the FIT Task Manager identified one well within a ¼-mile radius of the facility; however, the well is not on a public water supply (Ref. 36). The person per household figure for Lonoke County is 2.83 (Ref. 28). Ground water is used for irrigation within a 4-mile radius of the facility (Ref. 24). There are no Wellhead Protection areas located within the 4-mile radius (Ref. 36).

4.2 SURFACE WATER PATHWAY

4.2.1 Surface Water Characteristics

The site is located along the topographic ridge of a small valley (Ref. 11). On-site drainage follows topography and flows north/northeast towards Four-mile Creek (Ref. 3, p.1). There are two leachate springs located at the facility. The leachate springs follow the on-site drainage path and empty into Four-mile Creek (Ref. 11). Four-mile Creek becomes perennial approximately 3,000 feet from the facility (Ref. 11). The Probable Point-of-Entry (PPE) is the point where site drainage enters the perennial portion of Four-mile Creek. Four-mile Creek meanders approximately 5 miles

before emptying into Cypress Bayou (Ref. 11). The end of the 15-mile target distance limit lies within Cypress Bayou (Ref. 11). The flow rates of Four-mile Creek and Cypress Bayou are not known; however, both surface water bodies appear on a greater than 5 cubic feet per second (c.f.s.) map for the State of Arkansas (Ref. 30; Ref. 31). Four-mile Creek will be considered a minimal stream with a c.f.s. of greater than 10 and less than 100, and Cypress Bayou will be considered a moderate stream with c.f.s. of greater than 100 and less than 1,000.

On-site soils are the Leadvale silt loams with 3 - 8% slopes. The Leadvale series consist of deep, moderately well drained, slowly permeable, nearly level to gently sloping soils that formed in loamy materials (Ref. 41, p. 61). The two year, 24-hour rainfall average for the Cabot area is 4.0 inches (Ref. 14). It is not known if the City of Cabot Landfill lies within a floodplain; however, the 7.5 Minute Topographic Quadrangle in which the site is located is listed as a frequently flooded area in Arkansas (Ref. 27). The upgradient drainage area is estimated to be the total area of the site's 118 acres (Ref. 11; Ref. 42).

4.2.2 Surface Water Receptors

Four-mile Creek and Cypress Bayou are not used for a municipal water supply within the 15-mile downstream in-water segment (Ref. 22). Cypress Bayou and Four-mile Creek are warm water fisheries. Surface water is used for irrigation of soybean and rice production within the 15-mile in-water segment (Ref. 22). There are no known sensitive environments other than wetlands located within the target distance limit. There is approximately one mile of wetland frontage along Cypress Bayou (Ref. 11; Ref. 22; Ref. 32).

4.3 GROUND WATER RELEASE TO SURFACE WATER PATHWAY

A potential exists for ground water release to surface water via underground streams and springs discharging to Four-mile Creek. Four-mile Creek is perennial within a 1-mile radius of the facility (Ref. 11). Two on-site leachate springs discharge to drainage ditches that empty into the intermittent portion of Four-mile Creek (Figure 2). Chemical analysis of these leachate springs revealed the presence of low-level organic contaminants in the discharge (Tables 1 and 2) (Appendix A).

4.4 SOIL EXPOSURE PATHWAY

Chemical analysis of leachate from the landfill indicated the presence of hazardous constituents in the landfill (Tables 1 and 2) (Appendix A). The landfill area is approximately 14.9 acres. The landfill has been closed. At the time of closure the landfill was covered with a 2 feet thick compacted clay cap and 4 inches of top soil. The top soil was seeded at the time of closure and is heavily vegetated (Ref. 1, p. 1; Ref. 45). The FIT Task Manager observed problems with the cover's integrity during the on-site reconnaissance inspection. The facility is located within a rural area and the landfill is not fenced (Ref. 2, p. 1). A gate blocks the landfill entrance road (Ref. 5, p. 2).

4.4.1 Resident Threat Receptors

The landfill is inactive, there are no on-site residents or workers (Ref. 1, p. 1). The nearest residence is (b) (6) which is located approximately 100 feet from the facility boundary (Ref. 11). There are no known sensitive environments or resources located on an area of observed contamination (Ref. 22; Ref. 32).

4.4.2 Nearby Threat Receptors

The nearest residence is (b) (6), which is located approximately 100 feet from the facility boundary (Ref. 11). The populations within the 0 to ¼; ¼ to ½; and ½ to 1-mile radii are 20, 127, and 297, respectively (Ref. 11; Ref. 28). The population living within the various target distance radii was calculated by conducting a house count on a 7.5 Minute Series Topographic Map (Ref. 11).

4.5 AIR PATHWAY

4.5.1 Air Pathway Characteristics

The landfill is covered; however, the depth of the cover is not known. The landfill is heavily vegetated (Ref. 1, p. 2). The FIT Task Manager observed problems with the cover bridging during the on-site reconnaissance inspection (Ref. 46). Volatile and semi-volatile contaminants have been detected in leachate and leachate-stained soil at the facility (Tables 1 and 2) (Appendix A). A potential exists for gaseous migration of volatile and semi-volatile compounds via the Air Pathway.

4.5.2 Air Receptors

The nearest individual or regularly occupied building is the home of Mr. Hinson, located approximately 100 feet from the landfill boundary (Ref. 11). The populations within the 0 to ¼; ¼ to ½; ½ to 1; 1 to 2; 2 to 3; and 3 to 4-mile radii (estimated using a 7.5 Minute Topographic Map and the GEMS database) are 20; 127; 297; 2,266; 3,057; and 1,532, respectively (Ref. 11; Ref. 28; Ref. 37). There are no known sensitive environments within a 4-mile radius of the facility (Ref. 11; Ref. 22; Ref. 38). There is no known resource use of land within a ½-mile radius of the facility (Ref. 3, p. 1).

5.0 SUMMARY

The City of Cabot Landfill is an inactive sanitary landfill. The landfill was closed sometime in 1987. Chemical analysis of leachate from the landfill indicated the presence of hazardous constituents leaching from the landfill.

City and rural water districts supply water to the majority of residents within the target distance limit; however, there is documentation to suggest that there are areas within the 4-mile radius that rely on domestic wells for their potable water supply. There are no municipal or public supply wells within the 4-mile target distance limit. The nearest domestic well was sampled. The data indicates that no release to the residential well has occurred.

There are two leachate springs that discharge into on-site drainage ditches. Samples taken from the on-site leachate springs contained low levels of organic compounds, commonly associated with petroleum products such as tires.

Samples taken from on-site drainage ditches indicate low-levels of hazardous constituents migrating along the overland flow route of the Surface Water Pathway. No samples were collected from the perennial portion of Four-mile Creek.

The facility is inactive and there are no on-site residents or workers. The landfill is located in a predominantly rural area. The nearest residence is the home of (b) (6) located 400 feet from the landfill boundary. There is a potential for gaseous release of contaminants from the landfill due to the detection of Volatile Organic Compounds (VOCs) in the leachate, and the lack of a maintained cover.

SSI DOCUMENTATION LOG SHEET

SITE: Cabot Landfill
IDENTIFICATION NUMBER: ARD983269275
CITY: Cabot
STATE: Arkansas

REFERENCE NUMBER	DESCRIPTION OF THE REFERENCE
1	Kurt Soutendijk, FIT Chemist, Ecology and Environment, Inc., "Preliminary Assessment Report for Cabot Landfill." October 31, 1990.
2	Application for Approval of Sanitary Landfill Site. Prepared by the City of Cabot, Arkansas. December 6, 1977.
3	Sanitary Landfill Study for Cabot, Arkansas.
4	Letter. Operation Permit, City of Cabot. From: Ray Hightower, Chief, Solid Waste Control Division, Arkansas Department of Pollution Control and Ecology. To: Willie P. Ray, Mayor, City of Cabot. July 28, 1975.
5	Application for Solid Waste Disposal Permit, Prepared by the City of Cabot, Arkansas. December 5, 1981.
6	Permit Application Summary. Prepared by the Arkansas Department of Pollution Control and Ecology. March 16, 1981.
7	Record of Communication. Cabot Landfill. From: Michael Watson and Julie L. Koke, FIT, Ecology and Environment, Inc. To: Andy Dedman, Public Works Supervisor, City of Cabot, Arkansas. January 25, 1991. ARD983269275.
8	C.T. Bryant, A.H. Ludwig, and E.E. Morris, U.S. Geological Survey, "Ground Water Problems in Arkansas." Water Resources Investigations Report 85-4010. 1985.
9	Harlan B. Counts, U.S. Geological Survey, "Ground Water Resources of Parts of Lonoke, Prairie and White Counties, Arkansas." Water Resources Circular No. 5. 1957.
10	Hansford T. Shacklette and Josephine G. Boerngen. "Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States." U.S. Geological Survey Professional Paper No. 1270. 1984.

SSI DOCUMENTATION LOG SHEET

Continued

REFERENCE NUMBER	DESCRIPTION OF THE REFERENCE
11	U.S. Geological Survey, 7.5 Minute Topographic Maps of Arkansas: Mountain Springs, 1981; Beebe, 1981; Cabot, 1975; and Oak Grove, 1982.
12	Record of Communication. Cabot Landfill. From: Kurt Soutendijk, FIT Chemist, Ecology and Environment, Inc. To: Rodney Cabot, Cabot Water Supply. October 15, 1990. ARD983269275.
13	Record of Communication. Public Usage of Four-Mile Creek. From: Michael Watson, FIT, Ecology and Environment, Inc. To: Andy Dedman, City of Cabot. June 6, 1991. ARD983269275.
14	Herschfield, David M., 1961, Rainfall Frequency Atlas of the United States. U.S. Weather Bureau Technical Paper No. 40.
15	United States Potential Hazardous Waste Site Identification for Cabot Landfill, Cabot, Lonoke County, Arkansas. Prepared by Bart Canellas. September 6, 1990. ARD983269275.
16	Record of Communication. Old Cabot Landfill. From: Bart Canellas, EPA Region 6. To: File. October 11, 1990. ARD983269275.
17	Record of Communication. Phone call from Wilson Toltree (ADPC&E) regarding Cabot, Arkansas Landfill. From: Garrett Bondy, EPA Region 6. To: Davis, Becker and Parr. August 29, 1990. ARD983269275.
18	U.S. EPA Region 6, CERCLIS Listing by State and County. December 20, 1991.
19	U.S. EPA Region 6, RCRA Notifier's List by State and County. December 20, 1991.
20	Record of Communication. City of Austin Water Supply. From: Brenda Nixon Cook, Task Manager, ICF Technology, Inc. To: Patricia Morris, City of Austin. September 30, 1992. ARD983269275.
21	Record of Communication. City of Cabot. From: Brenda Nixon Cook, Task Manager, ICF Technology, Inc. To: Rodney Guthrie, City of Cabot. September 28, 1992. ARD983269275.
22	Record of Communication. Usage of 4-mile Creek and Cypress Bayou. From: Brenda Nixon Cook, Task Manager, ICF Technology, Inc. To: Joe Hughes, Technician, U.S. Soil Conservation Service. September 30, 1992. ARD983269275.

SSI DOCUMENTATION LOG SHEET

Continued

REFERENCE NUMBER	DESCRIPTION OF THE REFERENCE
23	Record of Communication. City of Ward Water Supply. From: Brenda Nixon Cook, Task Manager, ICF Technology, Inc. To: Joyce Feltner, City of Ward. September 29, 1992. ARD983269275.
24	Record of Communication. Water Supply of Grand Prairie. From: Brenda Nixon Cook, Task Manager, ICF Technology, Inc. To: Sandra Moore, Grand Prairie Water Company. September 29, 1992. ARD983269275.
25	Record of Communication. Water Supply of Bayou II and 319 Water Supply Company. From: Brenda Nixon Cook, Task Manager, ICF Technology, Inc. To: Shirley Healey, Utility Management Company. September 29, 1992. ARD983269275.
26	United States Environmental Protection Agency. "National Priorities List Sites: Arkansas." EPA/540/8-91/020. September 1991.
27	U.S. Department of the Interior. "Current Water Resources Activities in Arkansas, 1986-1987." Open-file Report 88-348.
28	U.S. Department of Commerce, Bureau of the Census. "Estimates of Households, four Counties: July 1, 1985." Current Population Report, Special Studies, Series P-23, No. 156.
29	State of Arkansas, Department of Pollution Control and Ecology. Regulation Establishing Water Quality Standards for Surface Water of the State of Arkansas." January 1988.
30	U.S. Geological Survey. "Water Resources Data, Arkansas Water Year 1989." U.S. Geological Survey Water-Data Report AR-894.
31	"5 C.F.S. Streams in Arkansas," Prepared by Arkansas State Highway and Transportation Department, Environmental Division.
32	Letter. Endangered Species for the States of Arkansas and Louisiana. From: Dennis B. Jordan, Field Supervisor, Endangered Species Field Office, U.S. Fish and Wildlife Service. To: Dr. Noel Lewandos, Ecology and Environment, Inc. May 14, 1985.
33	Letter. Net Precipitation Values. From: Andrew M. Platt, Group Leader, Hazardous Waste Systems, MITRE. To: Ms. Lucy Sibold, U.S. EPA. May 26, 1988.
34	Arkansas Department of Pollution Control and Ecology. Sanitary Landfill Evaluation Checklists for the City of Cabot Landfill, 1981-1985.

SSI DOCUMENTATION LOG SHEET

Continued

REFERENCE NUMBER	DESCRIPTION OF THE REFERENCE
35	Letter. Soil Investigation of Cabot Landfill. From: Richard T. Fielder, Soil Scientist, Soil Conservation Service. To: Mayor, City of Cabot. July 12, 1977.
36	Well Logs. State of Arkansas Report of Water Well Construction near Cabot Landfill.
37	U.S. Environmental Protection Agency, Geographical Exposure Modeling Systems (GEMS) Database, compiled from U.S. Census Bureau 1980 data. Accessed September 28, 1992.
38	Record of Communication. Arkansas Wellhead Protection Program: Plainview, Arkansas. From: Steve Cowan, FIT Biologist, ICF Technology, Inc. To: Bobby Makin, Assistant Director Engineering, Arkansas Department of Health. January 2, 1991.
39	Memorandum. Drums of Hazardous Materials at Cabot Sanitary Landfill. From: Mike Bates, Hazardous Waste Inspector, TSB. To: Dolce Hughes, Inspector Supervisor-Hazardous Waste, TSB. February 24, 1981.
40	Letter. Cabot Landfill Closure. From: Jim Beardon, R.S. Coordinator, Solid Waste Division, ADPC&E. To: N.E. Smith, Mayor, City of Cabot. January 6, 1987.
41	U.S. Department of Agriculture, Soil Conservation Service. "Soil Survey of Lonoke and Prairie Counties, Arkansas." October 1981.
42	Arkansas Assessment Coordination Division, City of Cabot Property Plot.
43	On-Site Reconnaissance Log Book for Cabot Landfill. Prepared by Michael Watson, Ecology and Environment, Inc. for EPA Region 6. January 25, 1991. ARD983269275.
44	Michael Watson, FIT Chemist, Ecology and Environment, Inc., "Screening Site Inspection Work Plan for Cabot Landfill." February 14, 1991.
45	Record of Communication. City of Cabot Landfill. From: Thomas Ritchie, Geologist, ICF Technology, Inc. To: Andy Dedmon, Public Works Supervisor, City of Cabot, Arkansas. March 16, 1993. ARD983269275.

SSI DOCUMENTATION LOG SHEET

Continued

REFERENCE NUMBER	DESCRIPTION OF THE REFERENCE
46	Record of Communication. Conditions at Cabot Landfill - FIT Field Reconnaissance Observations. From: Brenda Nixon Cook, Task manager, ICF Technology, Inc. To: Mike Watson, Chemist, Ecology and Environment. July 19, 1993. ARD983269275.

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APPENDIX A



Chemical Data Summary

SITE NAME AND CODE: CHRYST LAMFILL AREA/350075

CASE NUMBER: 16000

Page 1 of 4

CONCENTRATIONS IN PARTS PER MILLION (ppm)

Conducted by: Ecology & Environment, Inc.

TRAFFIC REPORT NUMBER AND STATION LOCATION

Traffic Number	17502/AFN154	17502/AFN157	17502/AFN156	17502/AFN157	17502/AFN158	17502/AFN159	17502/AFN160
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Percent Moisture	22.25.1	44.24.5	38.26.9	41.47.1	30.32	18.13.4	14.17.7
Location	15-01	15-01	15-01	15-04	15-05	15-06	15-07
Int/Gr	GROUND # 1	GROUND # 1	GROUND # 2	STREAM # 2	NORTH ROAD	BACKROAD	STOCK ROAD
Sample					ROADSIDE	ROADSIDE	ROADSIDE
Description					10' S-01		

Compound Name	CR/CON	CR/CON	CR/CON	CR/CON	CR/CON	CR/CON	CR/CON
ANTHRACENE	17429-30-5	IND	1450.00	5340.00	9410.00	5940.00	12500.00
BENZENE	78-10-2	IND	8.20	4.10	10.00	12.20	10.30
BIPHENYL	17440-29-3	IND	71.70	115.00	67.80	164.00	65.70
BUTADIENE	78-44-7	IND	0.67	0.84	1.20	0.40	1.10
CAMPHOR	17440-43-9	IND			2.20		
CALCIUM	78-48-47-0	IND	715.00	8290.00	1450.00	2210.00	790.00
CARBON	17440-47-3	IND	21.90	5.90	21.20	10.70	24.80
COPPER	78-48-44-4	IND	8.20	25.30	10.30	40.70	11.50
COPPER	17440-50-8	IND	18.70	12.70	26.10	6.30	8.20
IRON	78-35-97-6	IND	10500.00	14500.00	94000.00	243000.00	40400.00
LEAD	17429-32-1	IND	14.00	16.30	16.50	16.20	15.60
MANGANESE	78-35-93-4	IND	1070.00	675.00	775.00	821.00	821.00
MANGANESE	17429-36-5	IND	205.00	2040.00	253.00	2480.00	279.00
NITROGEN	78-48-42-0	IND	10.70	12.30	18.30	15.70	6.80
POTASSIUM	17440-09-7	IND	775.00	512.00	843.00	676.00	227.00
SILICON	17702-49-2	IND	0.60	0.75			0.87
SILVER	17440-22-4	IND				3.40	
SODIUM	78-48-23-5	IND	164.00	286.00	104.00	96.30	86.80
TIN	17440-28-0	IND		0.36	0.51		0.35
ZINC	78-48-62-2	IND	31.00	12.10	23.40	12.70	30.10
ZINC	17440-66-6	IND	33.30	62.30	91.60	96.30	30.20
CHLORINE		IND			2.00	1.60	
METHYLENE CHLORIDE	175-09-2	IND	0.02700		0.03100		0.01900
PERCHLORINE	157-64-1	IND	0.03600		0.09200		0.14000
CHLOROBENZENE	1108-90-7	IND	0.00300			0.00400	0.00700
ETHYLENE (TETRA)	11538-30-7	IND					0.02000
PERACETIC ACID	182-80-9	IND	1.50000				
PERACETIC ACID	191-09-3	IND		0.04300			
PERACETIC ACID	180-01-8	IND		0.29500		0.17000	
PERACETIC ACID	1109-30-7	IND		0.07100			
PERACETIC ACID	100-44-9	IND		0.08000		0.48000	
PERACETIC ACID	1102-30-9	IND		0.08000		0.46000	
PERACETIC ACID	158-35-3	IND			0.19000		0.12000
PERACETIC ACID	1218-31-9	IND			0.21000		0.12000
PERACETIC ACID	1117-81-7	IND	0.11000		0.12000		0.09000
PERACETIC ACID	1028-39-2	IND			0.13000		0.11000
PERACETIC ACID	1027-08-9	IND			0.17000		
PERACETIC ACID	158-35-8	IND			0.17000		
PERACETIC ACID	1192-39-5	IND			0.10000		
PERACETIC ACID	1502-71-9	IND			0.01500		

VER - VOLATILE; AHA - ACID/ALKALINE/NEUTRAL; PES - PESTICIDE/PCB; IND - INORGANIC; I - TARGET COMPOUND LIST COMPOUND (TCL);
Z - TENTATIVELY IDENTIFIED COMPOUND (TIC); H - HANSON LABORATORY ANALYTE; X - OTHER ANALYTE;
J - ESTIMATED CONCENTRATION (TIC, TCL, LESS THAN CML, OR TCL WITH GR-DC OUT OF CONTROL LIMITS); C - MS CONFIRMATION;
B - DATA FOR ANALYTE IS UNAVAILABLE; D - POSSIBLE LABORATORY CONTAMINANT; U - UNDETECTED; P - PESTICIDE TO IDENTIFIABLE

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Chemical Data Summary

STATE NAME AND CODE: OREGON LAMFILL 8/10/82/275

CASE NUMBER: 15000

Page 2 of 4

CONCENTRATIONS IN PARTS PER MILLION (ug/g)

Compiled by: Ecology & Environment, Inc.

TRAFFIC REPORT NUMBER AND STATION LOCATION

Traffic Number	SPS11/REF15A	SPS17/REF15B	SPS18/REF15C	SPS19/REF15D	SPS20/REF15E	SPS21/REF15F
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Percent Moisture	12/20.1	14/14.5	18/16.3	14/17.1	13/13.2	18/15.4
Location	IS-01	IS-02	IS-03	IS-04	IS-05	IS-06
Order	ISWING # 1	ISWING # 1	ISWING # 2	ISWING # 2	NORTH POND	BACKGROUND
Sample					DUPLICATE	SAMPLE
Description					OF S-01	
Compound Name	CONCEN	CLASS				
UNKNOWN	142.86	ARM/21		0.80000	21	
UNKNOWN	144.50	ARM/21		0.80000	21	
UNKNOWN	146.12	ARM/21		0.70000	21	
UNIDENTIFIED ALKANE	147.40	ARM/21		0.70000	21	
UNKNOWN	147.60	ARM/21		0.50000	21	
UNKNOWN	149.41	ARM/21		0.50000	21	
UNKNOWN	149.74	ARM/21		0.50000	21	
UNKNOWN	150.25	ARM/21		3.00000	21	
UNKNOWN	151.82	ARM/21		0.50000	21	
UNKNOWN	152.29	ARM/21		0.60000	21	
UNKNOWN	153.07	ARM/21		0.60000	21	
UNKNOWN	154.90	ARM/21				
ALKYL CONCENTRATION PRODUCT	154.40	ARM/21			40.00000	21
UNKNOWN	156.11	ARM/21			1.00000	21
UNIDENTIFIED ALKANE	156.41	ARM/21			0.30000	21
UNKNOWN	151.87	ARM/21			0.40000	21
UNKNOWN	152.72	ARM/21			0.80000	21
UNKNOWN	152.86	ARM/21			0.70000	21
UNIDENTIFIED ALKANE	154.27	ARM/21			0.60000	21
UNKNOWN	154.29	ARM/21			0.90000	21
UNIDENTIFIED ALKANE	155.12	ARM/21			1.00000	21
UNKNOWN	156.11	ARM/21			0.80000	21
UNIDENTIFIED ALKANE	157.40	ARM/21			0.70000	21
UNKNOWN	157.60	ARM/21			0.80000	21
UNKNOWN	149.01	ARM/21			9.00000	21
UNKNOWN	150.25	ARM/21			3.00000	21
UNKNOWN	151.82	ARM/21			1.00000	21
UNKNOWN	152.72	ARM/21			0.80000	21
UNKNOWN	144.79	ARM/21				
ALKYL CONCENTRATION PRODUCT	154.42	ARM/21			5.00000	21
UNKNOWN	156.01	ARM/21			15.00000	21
UNKNOWN	140.97	ARM/21			1.00000	21
UNKNOWN	142.76	ARM/21			0.60000	21
UNKNOWN	144.44	ARM/21			1.00000	21
UNKNOWN	146.02	ARM/21			2.00000	21
UNKNOWN	147.51	ARM/21			2.00000	21
UNKNOWN	148.91	ARM/21			1.00000	21
UNKNOWN	150.25	ARM/21			1.00000	21
UNKNOWN	151.82	ARM/21			0.50000	21
UNKNOWN	153.07	ARM/21				
ALKYL CONCENTRATION PRODUCT	154.42	ARM/21			5.00000	21
UNKNOWN	156.01	ARM/21			15.00000	21

VEN - VOLATILE ARM - ACID/BASE/NEUTRAL PES - PESTICIDE/PER IND - INORGANIC I - TARGET COMPOUND LIST COMPOUND (TCL)
 2 - TENTATIVELY IDENTIFIED COMPOUND (TIC) H - HUSTON LABORATORY ANALYTE X - OTHER ANALYTE
 E - ESTIMATED CONCENTRATION (TIC, TCL, LESS THAN CMA, OR TCL WITH GRAVE OUT OF CONTROL LIMITS) C - MS CONFIRMATION
 R - DATA FOR ANALYTE IS UNAVAILABLE B - POSSIBLE LABORATORY CONTAMINANT U - UNDETECTED P - PESTICIDE IS QUESTIONABLE

22
1
27
6

Chemical Data Summary

SITE NAME AND CODE: GREAT LAKES ILL. AND INJURY 9275
CASE NUMBER: 16048

Page 1 of 4

CONCENTRATIONS IN PARTS PER MILLION (ppm)
Compiled by: Ecology & Environment, Inc.

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TRAFFIC REPORT NUMBER AND STATION LOCATION

[illegible][illegible]

SITE NAME AND CODE: CAROT LAMPILL AND PLS 26/975
CASE NUMBER: 16098

Page 2 of 4

CONCENTRATIONS IN PARTS PER MILLION (PPM)
Compiled by: Ecology & Environment, Inc.

TRAFFIC REPORT NUMBER AND STATION LOCATION

Traffic Number	1F5529/MEN161	1F5529/MEN162	1F5529/MEN163	1F5529/MEN164	1F5529/MEN165	1F5529/MEN166	1F5529/MEN167	1F5529/MEN168	1F5529/MEN169	1F5529/MEN170
Matrix	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Percent Moisture	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Location	1W-01	1W-02	1W-03	1W-04	1W-05	1W-06	1W-07	1W-08	1W-09	1W-10
And/Or	STREAM # 1	STREAM # 2	STREAM # 2	STREAM # 2	STREAM # 2	STREAM # 2	STREAM # 2	STREAM # 2	STREAM # 2	STREAM # 2
Sample										
Description										
Compound Name	CAR/SCN	CLAROS								
1F5529/MEN161	24.12	1F5529/MEN162	0.01000	21						
1F5529/MEN162	124.18	1F5529/MEN163	0.00800	21						
1F5529/MEN163	124.27	1F5529/MEN164	0.01000	21						
1F5529/MEN164	141.75	1F5529/MEN165	0.02000	21						
1F5529/MEN165	141.92	1F5529/MEN166	0.01000	21						
1F5529/MEN166	142.17	1F5529/MEN167	0.01000	21						
1F5529/MEN167	142.33	1F5529/MEN168	0.01000	21						
1F5529/MEN168	142.66	1F5529/MEN169	0.01000	21						
1F5529/MEN169	142.90	1F5529/MEN170	0.01000	21						
1F5529/MEN170	142.97	1F5529/MEN161	0.02000	21						
1F5529/MEN161	143.43	1F5529/MEN162	0.00900	21						
1F5529/MEN162	143.82	1F5529/MEN163	0.01000	21						
1F5529/MEN163	144.65	1F5529/MEN164	0.01000	21						
1F5529/MEN164	145.00	1F5529/MEN165	0.01000	21						
1F5529/MEN165	145.19	1F5529/MEN166	0.01000	21						
1F5529/MEN166	145.11	1F5529/MEN167	0.00800	21						
1F5529/MEN167	134.08	1F5529/MEN168	0.01000	21						
1F5529/MEN168	145.13	1F5529/MEN169	0.00900	21						
1F5529/MEN169	129.85	1F5529/MEN170	0.03000	21						
1F5529/MEN170	130.20	1F5529/MEN161	0.10000	21						
1F5529/MEN161	130.34	1F5529/MEN162	0.02000	21						
1F5529/MEN162	130.36	1F5529/MEN163	0.01000	21						
1F5529/MEN163	132.53	1F5529/MEN164	0.00000	21						
1F5529/MEN164	132.64	1F5529/MEN165	0.10000	21						
1F5529/MEN165	133.45	1F5529/MEN166	0.07000	21						
1F5529/MEN166	133.65	1F5529/MEN167	0.10000	21						
1F5529/MEN167	142.65	1F5529/MEN168	0.05000	21						
1F5529/MEN168	143.83	1F5529/MEN169	0.09000	21						
1F5529/MEN169	145.01	1F5529/MEN170	0.50000	21						
1F5529/MEN170	146.13	1F5529/MEN161	0.30000	21						
1F5529/MEN161	147.02	1F5529/MEN162	0.06000	21						
1F5529/MEN162	147.23	1F5529/MEN163	0.20000	21						
1F5529/MEN163	148.27	1F5529/MEN164	0.30000	21						
1F5529/MEN164	148.57	1F5529/MEN165	0.06000	21						
1F5529/MEN165	149.19	1F5529/MEN166	0.10000	21						
1F5529/MEN166	149.31	1F5529/MEN167	0.20000	21						
1F5529/MEN167	150.31	1F5529/MEN168	0.05000	21						
1F5529/MEN168	150.41	1F5529/MEN169	0.07000	21						
1F5529/MEN169	143.57	1F5529/MEN170	0.01000	21						
1F5529/MEN170	14.08	1F5529/MEN161	0.01000	21						

VOL - VOLATILE AM - ACID/BASE/NEUTRAL PES - PESTICIDE/PCB INO - INORGANIC I - TARGET COMPOUND LIST COMPOUND (TCL)
2 - TENTATIVELY IDENTIFIED COMPOUND (TIC) H - HOUSEHOLD LABORATORY ANALYTE X - OTHER ANALYTE
J - ESTIMATED CONCENTRATION (TIC, TCL LESS THAN OR, OR TCL WITH ANALYTE OUT OF CONTROL LIMITS) C - NO CONFIRMATION
A - DATA FOR ANALYTE IS UNAVAILABLE B - POSSIBLE LABORATORY CONTAMINATION U - UNDETECTED P - PESTICIDE TO QUESTIONABLE

Chemical Data Summary

NOTE: NAME AND CODE: CHEST LINDOLLL ANDH2000075

CASE NUMBER: 10008

Page 1 of 4

CONCENTRATIONS IN PARTS PER MILLION (ppm)

Conducted by: Ecology & Environment, Inc.

TRAFFIC REPORT NUMBER AND STATION LOCATION

Traffic Number	STATION/REPORT	STATION/REPORT	STATION/REPORT	STATION/REPORT	STATION/REPORT	STATION/REPORT	STATION/REPORT	STATION/REPORT	STATION/REPORT	STATION/REPORT
Report Number	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Location	IN-01	IN-02	IN-03	IN-04	IN-05	IN-06	IN-07	IN-08	IN-09	IN-10
And/or	SPRING # 1	SPRING # 2	SPRING # 2	SPRING # 2	SPRING # 2	SPRING # 2	SPRING # 2	SPRING # 2	SPRING # 2	SPRING # 2
Sample										
Description										
Compound Name	CHESTLINDOLLL									
UNKNOWN	151.85	151.85	151.85	151.85	151.85	151.85	151.85	151.85	151.85	151.85
UNKNOWN	153.52	153.52	153.52	153.52	153.52	153.52	153.52	153.52	153.52	153.52
UNKNOWN	155.09	155.09	155.09	155.09	155.09	155.09	155.09	155.09	155.09	155.09
UNKNOWN	156.57	156.57	156.57	156.57	156.57	156.57	156.57	156.57	156.57	156.57
UNKNOWN	157.96	157.96	157.96	157.96	157.96	157.96	157.96	157.96	157.96	157.96

100 - VOLATILE 100 - ACID/BASE/NEUTRAL 100 - PESTICIDE/PCB 100 - INORGANIC 1 - TARGET COMPOUND LIST COMPOUND (TCL)
2 - TENTATIVELY IDENTIFIED COMPOUND (TIC) 100 - HOLLISTON LABORATORY ANALYTE 1 - OTHER ANALYTE
2 - ESTIMATED CONCENTRATION (TIC, TOL LESS THAN CML, OR TOL WITH ANALYTICAL OUT OF CONTROL LIMITS) C - MS CONFIRMATION
100 - DATA FOR ANALYTE IS UNAVAILABLE 100 - POSSIBLE LABORATORY CONTAMINANT 100 - UNDETECTED 100 - PESTICIDE TO QUESTIONABLE

[illegible]

TARGET COMPOUND LIST ANALYTE LISTS

Samples for this site were analyzed for the specific Target Compound List (TCL) compounds on the following pages. Data Summary Tables included with this report list only those compounds detected in the samples. If a compound is not listed on the Data Summary Table but is included on the attached lists, it was not detected in the samples. Four different sets of lists may be included, depending of the analytical protocols for the samples. These lists include:

1. Houston EPA Laboratory Drinking Water Sample Analysis
2. CLP Multi-Media, Multi-Concentration Sample Analysis
3. CLP Low Concentration Water Sample Analysis
4. CLP High Concentration Sample Analysis

The lists include the CAS number for each analyte. CLP CRDLs (Contract Required Detection Limits-metals and cyanide) or CRQLs (Contract Required Quantitation Limits-organics) for each analyte are listed for each of the CLP protocols. For samples analyzed by the Houston EPA laboratory, CLP multi-media low concentration water CRDLs or CRQLs and Houston laboratory Detection limits (DL) are listed.

Note that sample specific CRDLs or CRQLs are dependent on sample size, dilution and moisture content (soils). Variations in sample size and sample dilutions are noted in the data evaluation. The moisture content of each soil sample is listed on the data summary sheet.

Descriptions of how to determine CLP medium concentration soil CRQLs are listed at the bottom of the page of the multi-media multi-concentration lists.

HOUSTON DRINKING WATER VOLATILE ORGANIC ANALYTES

ANALYTE	CAS #	CLP CRQL	HOUSTON DL
		mg/l (ppm)	mg/l (ppm)
CHLOROMETHANE	74-87-3	0.010	0.005
BROMOMETHANE	74-83-9	0.010	0.005
VINYL CHLORIDE	75-01-4	0.010	0.005
CHLOROETHANE	75-00-3	0.010	0.005
METHYLENE CHLORIDE	75-09-2	0.005	0.005
ACETONE	67-64-1	0.010	0.005
CARBON DISULFIDE	75-15-0	0.005	0.005
1,1-DICHLOROETHENE	75-35-4	0.005	0.002
1,1-DICHLOROETHANE	75-34-3	0.005	0.002
1,2-DICHLOROETHENE (TOTAL)	540-59-0	0.005	NA
trans-1,2-DICHLOROETHENE	156-60-5	NA	0.002
cis-1,2-DICHLOROETHENE	156-59-2	NA	0.002
CHLOROFORM	67-66-3	0.005	0.002
1,2-DICHLOROETHANE	107-06-2	0.005	0.002
2-BUTANONE	78-93-3	0.010	0.005
1,1,1-TRICHLOROETHANE	71-55-6	0.005	0.002
CARBON TETRACHLORIDE	56-23-5	0.005	0.002
VINYL ACETATE	108-05-4	0.010	0.005
BROMODICHLOROMETHANE	75-27-4	0.005	0.002
1,2-DICHLOROPROPANE	78-87-5	0.005	0.002
cis-1,3-DICHLOROPROPENE	10061-01-5	0.005	0.002
TRICHLOROETHENE	79-01-6	0.005	0.002
DIBROMOCHLOROMETHANE	124-48-1	0.005	0.002
1,1,2-TRICHLOROETHANE	79-00-5	0.005	0.002
BENZENE	71-43-2	0.005	0.002
trans-1,3-DICHLOROPROPENE	10061-02-6	0.005	0.002
BROMOFORM	75-25-2	0.005	0.002
4-METHYL-2-PENTANONE	108-10-1	0.010	0.005
2-HEXANONE	591-78-6	0.010	0.005
TETRACHLOROETHENE	127-18-4	0.005	0.002
TOLUENE	108-88-3	0.005	0.005
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.005	0.002
CHLOROBENZENE	108-90-7	0.005	0.002
ETHYL BENZENE	100-41-4	0.005	0.005
STYRENE	100-42-5	0.005	0.005
XYLENES (TOTAL)	1330-20-7	0.005	NA
O-XYLENE	95-47-6	NA	0.005
M-XYLENE AND/OR	108-38-3	NA	0.005
P-XYLENE	106-42-3		
ACROLEIN	107-02-8	NA	0.1
ACRYLONITRILE	107-13-1	NA	0.1

NA - Not analyzed for by CLP or Houston laboratory.

IF THE PAGE FILMED IS NOT
AS LEGIBLE AS THIS LABEL,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

HOUSTON DRINKING WATER ABN (SEMI-VOLATILE) ORGANIC ANALYTES

ANALYTE	CAS #	CLP CRQL	HOUSTON DL
		mg/l (ppm)	mg/l (ppm)
PHENOL	108-95-2	0.010	0.004
bis(2-CHLOROETHYL) ETHER	111-44-4	0.010	0.002
2-CHLOROPHENOL	95-57-8	0.010	0.004
1,3-DICHLOROBENZENE	541-73-1	0.010	0.002
1,4-DICHLOROBENZENE	106-46-7	0.010	0.002
BENZYL ALCOHOL	100-51-6	0.010	0.004
1,2-DICHLOROBENZENE	95-50-1	0.010	0.002
2-METHYLPHENOL	95-48-7	0.010	0.006
bis(2-CHLOROISOPROPYL) ETHER	108-60-1	0.010	0.002
4-METHYLPHENOL	106-44-5	0.010	0.006
N-NITROSO-di-n-PROPYLAMINE	621-64-7	0.010	0.006
HEXACHLOROETHANE	67-72-1	0.010	0.002
NITROBENZENE	98-95-3	0.010	0.002
ISOPHORONE	78-59-1	0.010	0.004
2-NITROPHENOL	88-75-5	0.010	0.010
2,4-DIMETHYLPHENOL	105-67-9	0.010	0.006
BENZOIC ACID	65-85-0	0.050	0.010
bis(2-CHLOROETHOXY)METHANE	111-91-1	0.010	0.002
2,4-DICHLOROPHENOL	120-83-2	0.010	0.006
1,2,4-TRICHLOROBENZENE	120-82-1	0.010	0.002
NAPHTHALENE	91-20-3	0.010	0.002
4-CHLOROANILINE	106-47-8	0.010	0.004
HEXACHLOROBUTADIENE	87-68-3	0.010	0.002
4-CHLORO-3-METHYLPHENOL	59-50-7	0.010	0.008
2-METHYLNAPHTHALENE	91-57-6	0.010	0.002
HEXACHLOROCYCLOPENTADIENE	77-47-4	0.010	0.010
2,4,6-TRICHLOROPHENOL	88-06-2	0.010	0.006
2,4,5-TRICHLOROPHENOL	95-95-4	0.050	0.006
2-CHLORONAPHTHALENE	91-58-7	0.010	0.002
2-NITROANILINE	88-74-4	0.050	0.008
DIETHYLPHTHALATE	131-11-3	0.010	0.002
ACENAPHTHYLENE	208-96-8	0.010	0.002
2,6-DINITROTOLUENE	606-20-2	0.010	0.006
3-NITROANILINE	99-09-2	0.050	0.008
ACENAPHTHENE	83-32-9	0.010	0.002
2,4-DINITROPHENOL	51-28-5	0.050	0.030
4-NITROPHENOL	100-02-7	0.050	0.008
DIBENZOFURAN	132-64-9	0.010	0.002
2,4-DINITROTOLUENE	121-14-2	0.010	0.006
DIETHYLPHTHALATE	84-66-2	0.010	0.002
4-CHLOROPHENYL-PHENYL ETHER	7005-72-3	0.010	0.008
FLUORENE	86-73-7	0.010	0.002
4-NITROANILINE	100-01-6	0.050	0.008
4,6-DINITRO-2-METHYLPHENOL	534-52-1	0.050	0.020
N-NITROSODIPHENYLAMINE	86-30-6	0.010	0.004

HOUSTON DRINKING WATER ABN (SEMI-VOLATILE) ORGANIC ANALYTES (CONT.)

ANALYTE	CAS #	CLP CRQL	HOUSTON DL
		mg/l (ppm)	mg/l (ppm)
4-BROMOPHENYL-PHENYLETHER	101-55-3	0.010	0.008
HEXACHLOROBENZENE	118-74-1	0.010	0.002
PENTACHLOROPHENOL	87-86-5	0.050	0.015
PHENANTHRENE	85-01-8	0.010	0.002
ANTHRACENE	120-12-7	0.010	0.002
DI-n-BUTYLPHTHALATE	84-74-2	0.010	0.002
FLUORANTHENE	206-44-0	0.010	0.002
PYRENE	129-00-0	0.010	0.002
BUTYLBENZYLPHTHALATE	85-68-7	0.010	0.004
3,3'-DICHLOROBENZIDINE	91-94-1	0.020	0.010
BENZO(a)ANTHRACENE	56-55-3	0.010	0.008
CHRYSENE	218-01-9	0.010	0.008
bis(2-ETHYLHEXYL)PHTHALATE	117-81-7	0.010	0.004
DI-n-OCTYLPHTHALATE	117-84-0	0.010	0.004
BENZO(b)FLUORANTHENE	205-99-2	0.010	0.008
BENZO(k)FLUORANTHENE	207-08-9	0.010	0.008
BENZO(a)PYRENE	50-32-8	0.010	0.008
INDENO(1,2,3-cd)PYRENE	193-39-5	0.010	0.008
DIBENZ(a,h)ANTHRACENE	53-70-3	0.010	0.008
BENZO(g,h,i)PERYLENE	191-24-2	0.010	0.008
BENZIDINE	92-87-5	NA	0.020

NA - Not analyzed for by CLP laboratory.

HOUSTON DRINKING WATER PESTICIDE/PCB ANALYTES

ANALYTE	CAS #	CLP CRQL	HOUSTON DL
		mg/l (ppm)	mg/l (ppm)
alpha-BHC	319-84-6	0.00005	0.0002
beta-BHC	319-85-7	0.00005	0.0002
delta-BHC	319-86-8	0.00005	0.0003
gamma-BHC (lindane)	58-89-9	0.00005	0.0002
HEPTACHLOR	76-44-8	0.00005	0.0001
ALDRIN	309-00-2	0.00005	0.0002
HEPTACHLOR EPOXIDE	1024-57-3	0.00005	0.0001
ENDOSULFAN I	959-98-8	0.00005	0.0003
DIELDRIN	60-57-1	0.00010	0.0003
4,4'-DDE	72-55-9	0.00010	0.0005
ENDRIN	72-20-8	0.00010	0.0002
ENDOSULFAN II	33213-65-9	0.00010	0.0004
4,4'-DDD	72-54-8	0.00010	0.001
ENDOSULFAN SULFATE	1031-07-8	0.00010	0.0004
4,4'-DDT	50-29-3	0.00010	0.0006
METHOXYCHLOR	72-43-5	0.00050	0.0004
ENDRIN KETONE	53494-70-5	0.00010	NA
alpha-CHLORDANE	5103-71-9	0.00050	0.005
gamma-CHLORDANE	5103-74-2	0.00050	0.005
TOXAPHENE	8001-35-2	0.0010	0.005
AROCLOR-1016	12674-11-2	0.0005	0.005
AROCLOR-1221	11104-28-2	0.0005	0.010
AROCLOR-1232	11141-16-5	0.0005	0.005
AROCLOR-1242	53469-21-9	0.0005	0.005
AROCLOR-1248	12672-29-6	0.0005	0.005
AROCLOR-1254	11097-69-1	0.0010	0.005
AROCLOR-1260	11096-82-5	0.0010	0.005
ENDRIN ALDEHYDE	7421-93-4	NA	0.0001

NA - Not analyzed for by CLP or Houston EPA laboratory.

HOUSTON DRINKING WATER INORGANIC ANALYTES

ANALYTE	CAS #	CLP CRDL	HOUSTON DL
		mg/l (ppm)	mg/l (ppm)
ALUMINUM	7429-90-5	0.200	0.1
ANTIMONY	7440-36-0	0.060	0.060
ARSENIC	7440-38-2	0.010	0.0046
BARIUM	7440-39-3	0.200	0.010
BERYLLIUM	7440-41-7	0.005	0.005
CADMIUM	7440-43-9	0.005	0.005
CALCIUM	7440-47-2	5.000	0.150
CHROMIUM	7440-47-3	0.010	0.010
COBALT	7440-48-4	0.050	0.020
COPPER	7440-50-8	0.025	0.020
IRON	7439-89-6	0.100	0.031
LEAD	7439-92-1	0.003	0.030
MAGNESIUM	7439-95-4	5.000	0.150
MANGANESE	7439-96-5	0.015	0.005
MERCURY	7439-97-6	0.0002	0.0002
NICKEL	7440-02-0	0.040	0.020
POTASSIUM	7440-09-7	5.000	1.000
SELENIUM	7782-49-2	0.005	0.0048
SILVER	7440-22-4	0.010	0.010
SODIUM	7440-21-5	5.000	0.500
THALLIUM	7440-28-0	0.010	0.0038
VANADIUM	7440-62-2	0.050	0.030
ZINC	7440-66-6	0.020	0.035
CYANIDE		0.010	0.02
ALKALINITY		NA	5
HARDNESS		NA	5

NA - Not analyzed for by CLP laboratory.

CLP MULTI-MEDIA MULTI-CONCENTRATION ORGANIC VOLATILE ANALYTES

ANALYTE	CAS #	WATER CROL mg/l (ppm)	SOIL CROL mg/kg (ppm)
CHLOROMETHANE	74-87-3	0.010	0.010
BROMOMETHANE	74-83-9	0.010	0.010
VINYL CHLORIDE	75-01-4	0.010	0.010
CHLOROETHANE	75-00-3	0.010	0.010
METHYLENE CHLORIDE	75-09-2	0.005	0.005
ACETONE	67-64-1	0.010	0.010
CARBON DISULFIDE	75-15-0	0.005	0.005
1,1-DICHLOROETHENE	75-35-4	0.005	0.005
1,1-DICHLOROETHANE	75-34-3	0.005	0.005
1,2-DICHLOROETHENE (TOTAL)	540-59-0	0.005	0.005
CHLOROFORM	67-66-3	0.005	0.005
1,2-DICHLOROETHANE	107-06-2	0.005	0.005
2-BUTANONE	78-93-3	0.010	0.010
1,1,1-TRICHLOROETHANE	71-55-6	0.005	0.005
CARBON TETRACHLORIDE	56-23-5	0.005	0.005
VINYL ACETATE	108-05-4	0.010	0.010
BROMODICHLOROMETHANE	75-27-4	0.005	0.005
1,2-DICHLOROPROPANE	78-87-5	0.005	0.005
cis-1,3-DICHLOROPROPENE	10061-01-5	0.005	0.005
TRICHLOROETHENE	79-01-6	0.005	0.005
DIBROMOCHLOROMETHANE	124-48-1	0.005	0.005
1,1,2-TRICHLOROETHANE	79-00-5	0.005	0.005
BENZENE	71-43-2	0.005	0.005
trans-1,3-DICHLOROPROPENE	10061-02-6	0.005	0.005
BROMOFORM	75-25-2	0.005	0.005
4-METHYL-2-PENTANONE	103-10-1	0.010	0.010
2-HEXANONE	591-78-6	0.010	0.010
TETRACHLOROETHENE	127-18-4	0.005	0.005
TOLUENE	108-88-3	0.005	0.005
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.005	0.005
CHLOROBENZENE	108-90-7	0.005	0.005
ETHYL BENZENE	100-41-4	0.005	0.005
STYRENE	100-42-5	0.005	0.005
XYLENES (TOTAL)	1330-20-7	0.005	0.005

The above quantitation limits are for low concentration samples.

Medium concentration soil sample quantitation limits are 125 times the low concentration soil quantitation limits listed.

CLP MULTI-MEDIA MULTI-CONCENTRATION ORGANIC ABN (SEMI-VOLATILE) ANALYTES

ANALYTE	CAS #	WATER CRQL mg/l (ppm)	SOIL CRQL mg/kg (ppm)
PHENOL	108-95-2	0.010	0.330
bis(2-CHLOROETHYL) ETHER	111-44-4	0.010	0.330
2-CHLOROPHENOL	95-57-8	0.010	0.330
1,3-DICHLOROBENZENE	541-73-1	0.010	0.330
1,4-DICHLOROBENZENE	106-46-7	0.010	0.330
BENZYL ALCOHOL	100-51-6	0.010	0.330
1,2-DICHLOROBENZENE	95-50-1	0.010	0.330
2-METHYLPHENOL	95-48-7	0.010	0.330
bis(2-CHLOROISOPROPYL) ETHER	108-60-1	0.010	0.330
4-METHYLPHENOL	106-44-5	0.010	0.330
N-NITROSO-di-n-PROPYLAMINE	621-64-7	0.010	0.330
HEXACHLOROETHANE	67-72-1	0.010	0.330
NITROBENZENE	98-95-3	0.010	0.330
ISOPHORONE	78-59-1	0.010	0.330
2-NITROPHENOL	88-75-5	0.010	0.330
2,4-DIMETHYLPHENOL	105-67-9	0.010	0.330
BENZOIC ACID	65-85-0	0.050	1.600
bis(2-CHLOROETHOXY)METHANE	111-91-1	0.010	0.330
2,4-DICHLOROPHENOL	120-83-2	0.010	0.330
1,2,4-TRICHLOROBENZENE	120-82-1	0.010	0.330
NAPHTHALENE	91-20-3	0.010	0.330
4-CHLOROANILINE	106-47-8	0.010	0.330
HEXACHLOROBUTADIENE	87-68-3	0.010	0.330
4-CHLORO-3-METHYLPHENOL	59-50-7	0.010	0.330
2-METHYLNAPHTHALENE	91-57-6	0.010	0.330
HEXACHLOROCYCLOPENTADIENE	77-47-4	0.010	0.330
2,4,6-TRICHLOROPHENOL	88-06-2	0.010	0.330
2,4,5-TRICHLOROPHENOL	95-95-4	0.050	1.600
2-CHLORONAPHTHALENE	91-58-7	0.010	0.330
2-NITROANILINE	88-74-4	0.050	1.600
DIMETHYLPHTHALATE	131-11-3	0.010	0.330
ACENAPHTHYLENE	208-96-8	0.010	0.330
2,6-DINITROTOLUENE	606-20-2	0.010	0.330
3-NITROANILINE	99-09-2	0.050	1.600
ACENAPHTHENE	83-32-9	0.010	0.330
2,4-DINITROPHENOL	51-28-5	0.050	1.600
4-NITROPHENOL	100-02-7	0.050	1.600
DIBENZOPURAN	132-64-9	0.010	0.330
2,4-DINITROTOLUENE	121-14-2	0.010	0.330
DIETHYLPHTHALATE	84-66-2	0.010	0.330
4-CHLOROPHENYL-PHENYL ETHER	7005-72-3	0.010	0.330
FLUORENE	86-73-7	0.010	0.330
4-NITROANILINE	100-01-6	0.050	1.600
4,6-DINITRO-2-METHYLPHENOL	534-52-1	0.050	1.600
N-NITROSODIPHENYLAMINE	86-30-6	0.010	0.330

CLP MULTI-MEDIA MULTI-CONCENTRATION ABN (SEMI-VOLATILE) ORGANIC ANALYTES
(CONT.)

ANALYTE	CAS #	WATER CRQL mg/l (ppm)	SOIL CRQL mg/kg (ppm)
4-BROMOPHENYL-PHENYLETHER	101-55-3	0.010	0.330
HEXACHLOROBENZENE	118-74-1	0.010	0.330
PENTACHLOROPHENOL	87-86-5	0.050	1.600
PHENANTHRENE	85-01-8	0.010	0.330
ANTHRACENE	120-12-7	0.010	0.330
DI-n-BUTYLPHTHALATE	84-74-2	0.010	0.330
FLUORANTHENE	206-44-0	0.010	0.330
PYRENE	129-00-0	0.010	0.330
BUTYLBENZYLPHTHALATE	85-68-7	0.010	0.330
3,3'-DICHLOROBENZIDINE	91-94-1	0.020	0.660
BENZO(a)ANTHRACENE	56-55-3	0.010	0.330
CHRYSENE	218-01-9	0.010	0.330
bis(2-ETHYLHEXYL)PHTHALATE	117-81-7	0.010	0.330
DI-n-OCTYLPHTHALATE	117-84-0	0.010	0.330
BENZO(b)FLUORANTHENE	205-99-2	0.010	0.330
BENZO(k)FLUORANTHENE	207-08-9	0.010	0.330
BENZO(a)PYRENE	50-32-8	0.010	0.330
INDENO(1,2,3-cd)PYRENE	193-39-5	0.010	0.330
DIBENZ(a,h)ANTHRACENE	53-70-3	0.010	0.330
BENZO(g,h,i)PERYLENE	191-24-2	0.010	0.330

The above quantitation limits are for low concentration samples.

Medium concentration soil sample quantitation limits are 60 times the low concentration soil quantitation limits listed.

240

CLP MULTI-MEDIA MULTI-CONCENTRATION ORGANIC PESTICIDE/PCB ANALYTES

ANALYTE	CAS #	WATER CRQL mg/l (ppm)	SOIL CRQL mg/kg (ppm)
alpha-BHC	319-84-6	0.00005	0.0080
beta-BHC	319-85-7	0.00005	0.0080
delta-BHC	319-86-8	0.00005	0.0080
gamma-BHC (lindane)	58-89-9	0.00005	0.0080
HEPTACHLOR	76-44-8	0.00005	0.0080
ALDRIN	309-00-2	0.00005	0.0080
HEPTACHLOR EPOXIDE	1024-57-3	0.00005	0.0080
ENDOSULFAN I	959-98-8	0.00005	0.0080
DIELDRIN	60-57-1	0.00010	0.0160
4,4'-DDE	72-55-9	0.00010	0.0160
ENDRIN	72-20-8	0.00010	0.0160
ENDOSULFAN II	33213-65-9	0.00010	0.0160
4,4'-DDD	72-54-8	0.00010	0.0160
ENDOSULFAN SULFATE	1031-07-8	0.00010	0.0160
4,4'-DDT	50-29-3	0.00010	0.0160
METHOXYCHLOR	72-43-5	0.00050	0.0080
ENDRIN KETONE	53494-70-5	0.00010	0.0160
alpha-CHLORDANE	5103-71-9	0.00050	0.0080
gamma-CHLORDANE	5103-74-2	0.00050	0.0080
TOXAPHENE	8001-35-2	0.0010	0.160
AROCLOR-1016	12674-11-2	0.0005	0.080
AROCLOR-1221	11104-28-2	0.0005	0.080
AROCLOR-1232	11141-16-5	0.0005	0.080
AROCLOR-1242	53469-21-9	0.0005	0.080
AROCLOR-1248	12672-29-6	0.0005	0.080
AROCLOR-1254	11097-69-1	0.0010	0.160
AROCLOR-1260	11096-82-5	0.0010	0.160

The above quantitation limits are for low concentration samples.

Medium concentration soil sample quantitation limits are 15 times the low concentration soil quantitation limits listed.

4-1-2

IF THE PAGE FILLED IS NOT
AS LEGIBLE AS THIS LABEL,
IT IS DUE TO THE QUALITY
OF THE ORIGINAL.

CLP MULTI-MEDIA MULTI-CONCENTRATION FULL INORGANIC ANALYTES

ANALYTE	CAS #	WATER CRDL	SOIL CRDL
		mg/l (ppm)	mg/kg (ppm)
ALUMINUM	7429-90-5	0.200	40
ANTIMONY	7440-36-0	0.060	12
ARSENIC	7440-38-2	0.010	2
BARIUM	7440-39-3	0.200	40
BERYLLIUM	7440-41-7	0.005	1
CADMIUM	7440-43-9	0.005	1
CALCIUM	7440-47-2	5.000	1000
CHROMIUM	7440-47-3	0.010	2
COBALT	7440-48-4	0.050	10
COPPER	7440-50-8	0.025	5
IRON	7439-89-6	0.100	20
LEAD	7439-92-1	0.003	0.6
MAGNESIUM	7439-95-4	5.000	1000
MANGANESE	7439-96-5	0.015	3
MERCURY	7439-97-6	0.0002	0.1
NICKEL	7440-02-0	0.040	8
POTASSIUM	7440-09-7	5.000	1000
SELENIUM	7782-49-2	0.005	1
SILVER	7440-22-4	0.010	2
SODIUM	7440-23-5	5.000	1000
THALLIUM	7440-28-0	0.010	2
VANADIUM	7440-62-2	0.050	10
ZINC	7440-66-6	0.020	4
CYANIDE		0.010	5

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD
HOUSTON, TX 77099

Ref. Case No. 16008

Site Name Cabot Landfill

Date: 4 / 25 / 91

Subject: CLP Data Review

From: Michael L. Daggett, Chief, Organic Lab Section: 6E-HL

To: E. Sierra, 6E-8H

McKitter

A review of the laboratory raw data for the reference site has been completed by members of the Laboratory Section.
Samples were:

INORGANIC:	_____	_____	_____	_____
	_____	_____	_____	_____
	_____	_____	_____	_____
	_____	_____	_____	_____
	_____	_____	_____	_____
	_____	_____	_____	_____
ORGANIC:	<u>FP-572</u>	_____	_____	_____
	↓	_____	_____	_____
	↓	_____	_____	_____
	<u>FP-585</u>	_____	_____	_____

The data was found:

- () Acceptable
- (X) Provisional; use of data requires caution. Problems are noted in Review Summary.
- () Unacceptable; data should not be used. Problems are noted in Review Summary.

Questions regarding the review can be addressed to me.

Attachment:

cc: Mahmoud El-Feky, 6E-HL
Mike Hiatt, EMSL/Las Vegas

NOTABLE PERFORMANCE:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TX 77099

MEMORANDUM

Date: April 24, 1991
Subject: CLP Data Review
From: Mahmoud El-Feky, Acting TPO, Region 6
To: Michael Daggett, Chief, Organic Section, Houston Branch,
Region 6,

Attached is the data review summary for Case # 16008
SDG # FP572
Site Cabot Landfill

Data was found: (X) Provisional
() Unacceptable

Action required by TPO: () Yes
(X) No

COMMENTS:

1. Acetone and benzoic acid failed \pm RSD and/or \pm D calibration criteria.
2. TCL compounds 3-nitroaniline, 4-nitroaniline, 3,3'-dichlorobenzidine, and 2-butanone failed minimum RRF guidelines.
3. GPC deliverables were omitted.

COMMENTS/CLARIFICATIONS
REGION VI CLP QA REVIEW

CASE 16008 SDG FP572 SITE Cabot Landfill LAB JORDAN

The following is a summary of sample qualifiers used by Region VI in reporting this CLP data:

<u>No.</u>	<u>Acceptable</u>	<u>Provisional</u>	<u>Unacceptable</u>
VOA	<u>7</u>	<u>7</u>	<u></u>
BNA	<u></u>	<u>14</u>	<u></u>
PEST	<u>14</u>	<u></u>	<u></u>
OTHER	<u>N/A</u>	<u></u>	<u></u>

COMMENTS: The case consisted of 7 water and 7 soil samples for complete RAS organics analysis. The data package arrived on time for the 35 day turnaround. Low level analyses were performed. VOA chlorinated and aromatic compounds, benzoic acid, PNAs, phenols, and chlordanes were reported in the samples. Data for 7 VOA and 14 BNA samples are provisional due to minor deficiencies in calibrations and compound identification. An evidence audit was conducted on the complete sample delivery group file (CSF) deliverables and the Evidence Audit Checklist is attached to this report.

1. **HOLDING TIMES** - Acceptable. The samples were extracted and analyzed within technical (40CFR136) and contractual holding time limits.

2. **GC/MS TUNE/INSTRUMENT PERFORMANCE** - Acceptable. BFB and DFTPP met GC/MS tuning criteria for VOA and BNA analyses. Internal standard areas were within QC control limits for VOA and BNA samples. Pest/PCB analyses met instrument performance requirements.

3. **CALIBRATIONS** - Provisional. CCC and SPCC compounds met QC criteria for VOA and BNA calibrations. Results are estimated for acetone in samples FP-579, FP-580, and FP-584, and for benzoic acid in sample FP-573 because these compounds failed 1RSD and/or 1D calibration guidelines. The following quantitation limits are unusable because the compounds failed minimum RRF criteria:

3-nitroaniline and 4-nitroaniline in all samples,
2- butanone in all water samples, and
1,3'-dichlorobenzidine in water samples FP-579, FP-580, FP-581, FP-582, FP-583, and FP-584.

Some pesticides exceeded 1D calibration guidelines, but sample data were not affected.

ORGANIC QA CHECKLIST
CONTINUATION PAGE

CASE NO. 16008 SDG: FP572 SITE Cabot Landfill

COMMENTS:

4. **BLANKS** - Acceptable. Method blanks met QC requirements in all fractions. VOA blanks contained acetone, methylene chloride, chlorobenzene, 4-methyl-2-pentanone, and xylene. Sample results are estimated for acetone and methylene chloride < 10x blank levels and for chlorobenzene, 4-methyl-2-pentanone, and xylene < 5x blank levels due to possible laboratory contamination.

5. **SURROGATES** - Acceptable. Surrogate recoveries were within QC limits for all fractions.

6. **MATRIX SPIKE/MATRIX SPIKE DUPLICATE** - Acceptable. MS/MSD recoveries were within QC limits for VOA and Pest/PCB samples. MS/MSD recoveries for pentachlorophenol exceeded QC limit in low soil samples, but sample data were not affected.

7A. **COMPOUND IDENTIFICATION** - Provisional. Aromatic and chlorinated TCL compounds were reported in VOA samples, in addition to blank contaminants. Benzoic acid, PNAs, phenols, and common phthalate esters were identified in BNA samples. Sample spectra generally met identification criteria. Identification of benzo(a)anthracene is tentative in sample FP-581 due to spectral interferences. That result is estimated and should be used with caution. Both chlordanes were reported < CRQL in sample FP-575.

7B. **DATA COMPLETENESS** - Provisional. The data package was essentially complete, except for omitted GPC deliverables. Some BNA TICs require "B" flags. The laboratory was notified of needed resubmissions (See attached Fax Record Log).

8. **CASE ASSESSMENT** - Data for 7 VOA and 14 BNA samples are provisional due to problems with calibrations and compound identification. Data for 7 VOA and 14 Pest/PCB samples are acceptable.

Page 1 of 1

In Reference to Case No(s):
16008 SDG: FP572

REGIONAL/LABORATORY COMMUNICATION SYSTEM
FAX Record Log

Date of FAX: April 24, 1991
Laboratory Name: JORDAN
Lab Contact: Dr. James F. Galasyn
Region: 6
Regional Contact: Harry Kreigh - ESAT

FAX sent by: Laboratory X Region

In reference to data for the following fraction(s):

BNA

Summary of Questions/Issues:

A. General

1. Please submit Form DC-1 and use custody seals on all future submissions of original data.
2. Please submit GPC deliverables for BNA and Pest/PCB samples and calibration standards.

B. BNA

1. FP-573 and FP-583: Standard spectra were omitted for benzoic acid.
2. TICs consistent with blank contaminants were reported in samples, except samples FP-580, FP-581, and FP-583, but results were not flagged "B". Please review the data.

Please respond to the above issues within 10 days to:

USEPA Region 6 Lab
10625 Fallstone Road
Houston, TX 77099

For further information, please call me at: (713) 983-2137
or fax: (713) 983-2248.


Harry A. Kreigh

April 24, 1991
Date

Distribution: (1) Lab Copy, (2) Region Copy, (3) SMO Copy

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD
HOUSTON, TX 77099

Ref. Case No. 16008
Site Name Cabot Landfill

Date: 5/15/91

Subject: CLP Data Review

From: Michael L. Daggett, Chief, Organic Lab Section; 6E-HL

To: E. Sierra, 6E-SH

A review of the laboratory raw data for the reference site has
been completed by members of the Laboratory Section.
Samples were:

INORGANIC: MFN154
↓
MFN167
ORGANIC:

The data was found:

- () Acceptable
(X) Provisional; use of data requires caution. Problems are
noted in Review Summary.
() Unacceptable; data should not be used. Problems are noted
in Review Summary.

Questions regarding the review can be addressed to me.

Attachments

cc: Mahmoud El-Feky, 6E-HL
Mike Hiatt, EMSL/Las Vegas

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

MEMORANDUM

Date: May 14, 1991
Subject: CLP Data Review
From: Mahmoud El-Feky, Acting TPO, Region 6
To: Michael L. Daggett, Chief, Organic Lab Section; 6E-HL

Attached is the data review summary for Case # 16008
SDG # MFN154
Site Cabot Landfill

Data was found: ☒ (X) Provisional
☐ () Unacceptable

Action required by TPO: ☐ () Yes
☒ (X) No

COMMENTS:

2
1
5
0

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

INORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 16008 SITE Cabot Landfill
LABORATORY N.F.T., Inc. (CO) NO. OF SAMPLES
CONTRACT # 68-D0-0145 MATRIX 7/soil, 7/water
SDG # MFN154 REVIEWER (IF NOT ESD) ESAT
SOW# 1/90 REVIEWER'S NAME Mike Fortitta
TPO: ACTION ____ FYI X COMPLETION DATE May 14, 1991
ACCT # 1TGBCNB4 SF # TGBUZZ

SAMPLE NO.: MFN154, MFN155, MFN156, MFN157, MFN158, MFN159,
MFN160, MFN161, MFN162, MFN163, MFN164, MFN165, MFN166, MFN167

DATA ASSESSMENT SUMMARY

	ICP	AA	Hg	CYANIDE
1. HOLDING TIMES	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
2. CALIBRATIONS	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
3. BLANKS	<u>X</u>	<u>X</u>	<u>O</u>	<u>X</u>
4. ICS	<u>O</u>			
5. LCS	<u>O</u>	<u>O</u>		
6. DUPLICATE ANALYSIS	<u>X</u>	<u>O</u>	<u>O</u>	<u>O</u>
7. MATRIX SPIKE	<u>X</u>	<u>X</u>	<u>O</u>	<u>O</u>
8. MSA		<u>N/A</u>		
9. SERIAL DILUTION	<u>X</u>			
10. SAMPLE VERIFICATION	<u>O</u>	<u>X</u>	<u>O</u>	<u>O</u>
11. OTHER QC	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
12. OVERALL ASSESSMENT	<u>X</u>	<u>X</u>	<u>O</u>	<u>X</u>

O = Data had no problems/or qualified due to minor problems.
M = Data qualified due to major problems.
Z = Data unacceptable.
X = Problems, but do not affect data.
N/A = Not applicable

ACTION ITEMS: Blank concentrations were above the instrument detection limits for six analytes; differences between duplicate results exceeded quality control limits for one analyte in the soil samples; matrix spike recoveries were outside of limits for two analytes in the soil samples; serial dilution differences exceeded the limit for two analytes in the water samples, and FAA analytical spike recoveries exceeded limits for 11 of 64 determinations.

AREAS OF CONCERN:

NOTABLE PERFORMANCE: Mercury met quality control criteria.

INORGANIC QA REVIEW
CONTINUATION PAGE

Case 16008 SDG MFN154 Site Cabot Landfill Lab NFT, Inc. (CO)

COMMENTS: Seven soil and seven water samples were analyzed at low concentrations for total metals and cyanide. The data package is provisional because: blank concentrations were above the instrument detection limits for six analytes; differences between duplicate results exceeded quality control limits for one analyte in the soil samples; matrix spike recoveries were outside of limits for two analytes in the soil samples; serial dilution differences exceeded the limit for two analytes in the water samples, and FAA analytical spike recoveries exceeded limits for 11 of 64 determinations.

1. Holding Times

All holding time criteria were met.

2. Calibrations

All calibrations were acceptable.

3. Blanks

A. Calibration Blanks

The concentrations of calcium and cyanide in the calibration blanks were above the instrument detection limits (IDL) but less than the contract required detection limits (CRDL). Sample results greater than the IDL's but less than five times the amount in any blank should be qualified as undetected (U).

The concentrations of lead in the calibration blanks were above the negative IDL. False negatives are possible.

B. Preparation Blanks

The concentrations of aluminum, calcium, and iron in the preparation blank for the soil samples were above the instrument detection limits (IDL) but less than the contract required detection limits (CRDL). Sample results greater than the IDL's but less than five times the amount in any blank should be qualified as undetected (U).

The concentrations of arsenic, calcium, iron, and cyanide in the preparation blank for the water samples were above the IDL's but less than the CRDL's. Sample results greater than the IDL's but less than five times the amount in any blank should be qualified as undetected (U).

C. All other blank results were acceptable.

4. ICS

Interference check sample criteria were met.

5. LCS

All laboratory control sample results were acceptable.

6. Duplicate Analysis

The chromium results for the soil samples are qualified as estimated (J) due to a 56.6% relative percent difference for duplicate results.

All other duplicate results met technical quality control criteria.

7. Matrix Spike

A. Pre-digestion/Pre-distillation Matrix Spike Recovery

1. The antimony results for the soil samples are qualified as estimated (UJ) due to a pre-digestion matrix spike recovery of 71.2%. Matrix interference is suspected.
2. The chromium results for the soil samples are qualified as estimated (J) due to a pre-digestion matrix spike recovery of 62.7%. Matrix interference is suspected.

B. Furnace Atomic Absorption Quality Control

1. The selenium results for MFN154, MFN155, and MFN163 are qualified as estimated (J and UJ) due to FAA analytical spike recoveries of 79.0%, 80.0% and 68.0%, respectively. Matrix interference is suspected.
2. The selenium results for MFN156 and MFN160 are qualified as estimated (UJ) due to FAA analytical spike recoveries of 116.0% and 121.0%, respectively. Matrix interference is suspected.
3. The thallium results for MFN161, MFN163, MFN164, MFN165, MFN166 and MFN167 are qualified as estimated (J and UJ) due to FAA analytical spike recoveries ranging from 72.5% to 83.5%. Matrix interference is suspected.

- C. All other analytes had acceptable pre-digestion/pre-distillation matrix spike recoveries and FAA quality control.

8. Serial Dilutions

The aluminum results for the water samples are qualified as estimated (J and UJ) due to a serial dilution difference of 94.7%. Physical or chemical interference exist due to the sample matrix.

The iron results for the water samples are qualified as estimated (J) due to a serial dilution difference of 14.4%. Physical or chemical interference exist due to the sample matrix.

All other serial dilution results met quality control criteria.

9. Sample Verification

- A. The "W" flags are not necessary for arsenic in MFN155, MFN161, MFN162, MFN163, MFN164, MFN165, MFN166 and MFN167.
- B. The "M" flags are not necessary for arsenic in MFN162, MFN164 and MFN166.
- C. The "W" flags are not necessary for lead in MFN161, MFN162, MFN163, MFN164, MFN165, MFN166 and MFN167.
- D. The "W" flags are not necessary for selenium in MFN157, MFN158, MFN159, MFN161, MFN162, MFN164, MFN165, MFN166 and MFN167.
- E. Form 14 was corrected in resubmission.

10. Other QC

None

11. Overall Assessment

The data package is provisional for the following reasons:

- A. Blank concentrations were above the instrument detection limits for six analytes.
- B. Differences between duplicate results exceeded quality control limits for one analyte in the soil samples.
- C. Matrix spike recoveries were outside of limits for two analytes in the soil samples.
- D. Serial dilution differences exceeded the limit for two analytes in the water samples.
- E. FAA analytical spike recoveries exceeded limits for 11 of 64 determinations.
- F. All other technical requirements were met.

In Reference to Case
Case 16008 SDG MFN154
Page 1 of 1 pages

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM
Telephone/FAX Record Log

Date of Call: May 14, 1991
Laboratory Name: N.F.T., Inc. (CO)
Lab Contact: Ronald L. Keil
Region: 6
Regional Contact: Michael J. Fertitta (ESAT)
Call Initiated by: Region

In reference to data for the following sample numbers:

MFN154, MFN155, MFN156, MFN157, MFN158, MFN159, MFN160, MFN161,
MFN162, MFN163, MFN164, MFN165, MFN166, MFN167

Summary of Questions/Issues Discussed:

- A. The "W" flags are not necessary for arsenic in MFN155, MFN161, MFN162, MFN163, MFN164, MFN165, MFN166 and MFN167.
- B. The "M" flags are not necessary for arsenic in MFN162, MFN164 and MFN166.
- C. The "W" flags are not necessary for lead in MFN161, MFN162, MFN163, MFN164, MFN165, MFN166 and MFN167.
- D. The "W" flags are not necessary for selenium in MFN157, MFN158, MFN159, MFN161, MFN162, MFN164, MFN165, MFN166 and MFN167.
- E. Form 14 was corrected in resubmission.

Summary of Resolutions:

Lab will look into items and will submit data within ten working days.

Michael J. Fertitta
Signature

5/14/91
Date

Distribution: (1) Lab Copy, (2) Region Copy, (3) SMO Copy

Mantech Environmental Technology, Inc.
ESAT Region 6

c/o US EPA 10625 Fallstone Road, Houston, TX 77099 (713) 983-2243

FACSIMILE COVER SHEET

Please deliver the following pages to:

Name Ronald L. Keil

Firm N.F.T., Inc.

City Golden State CO

Telephone (303) 278-1888 Ext. _____

Fax Telephone No. (303) 278-1399 Ext. _____

Sender:

Name Michael J. Fertitta

Date May 14, 1991 Time _____

Total Number of pages including this Cover Sheet 2

If you do not receive all the pages or if any pages are unclear,
please call: (713) 983-2243.

MESSAGES: _____

Fax Model No. Panafax UF-620 Fax No. (713) 983-2248

COMPLETE SAMPLE DELIVERY GROUP FILE (CSF)
EVIDENCE AUDIT CHECKLIST

Region 6

Audit No. 16008MFN154

Lab Name: N.F.T. Inc.

EPA Lab Code: NFT

Lab Location: Golden, CO

Date CSF Received: 4/16/91 Box No. (s): 1

Routine Analytical Services (RAS) No: 16008

Special Analytical Services (SAS) No: _____

Sample Delivery Group (SDG) No: MFN154

No. of Samples: 14 Contract Type: Inorganic

Date of Audit: 5/14/91 Re-submitted CSF: Y/N? N

Auditor: Michael J. Fertitta
(Print Name)

Auditor: Michael J. Fertitta
(Signature)

EVIDENCE AUDIT CHECKLIST:

	Yes	No	N/A
Custody Seals			
1. Custody seals present?	(X)	()*	()
2. Custody seals intact?	(X)	()	()
Form DC-2			
3. Form DC-2 present?	(X)	()*	()
4. Numbering scheme on Form DC-2 accurate?	(X)	()	()
5. Enclosed documents listed?	(X)	()	()
6. Listed documents enclosed?	(X)	()*	()

COMPLETE SAMPLE DELIVERY GROUP FILE (CSF)
EVIDENCE AUDIT CHECKLIST

Region 6

Audit No. 16008MFN154

EVIDENCE AUDIT CHECKLIST:

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
Form DC-1			
7. Form DC-1 present?	(X)	()*	()
8. Form DC-1 complete?	(X)	()	()
9. Form DC-1 accurate?	(X)	()	()
Chain-of-Custody Record(s)			
10. Chain-of-custody record(s) present?	(X)	()*	()
11. Chain-of-custody record(s) signed?	(X)	()*	()
12. Chain-of-custody record(s) dated?	(X)	()*	()
Traffic Reports			
13. Traffic report(s) or packing list(s) present?	(X)	()*	()
14. Traffic report(s) or packing lists(s) signed?	(X)	()	()
15. Traffic reports(s) or packing list(s) dated?	(X)	()	()
Airbills			
16. Airbill present/airbill sticker identified?	(X)	()*	()
17. Airbill signed?	(X)	()	()
18. Airbill dated?	(X)	()	()

COMPLETE SAMPLE DELIVERY GROUP FILE (CSF)
EVIDENCE AUDIT CHECKLIST

Region 6

Audit No. 16008MFN154

EVIDENCE AUDIT CHECKLIST:

	Yes	No	N/A
Sample Tags			
19. Sample Tags present?	(X)	()	()
20. Should sample tags be present?	() *	()	(X)
Document Control			
21. Laboratory documents complete?	(X)	()	()
22. Laboratory documents legible?	(X)	() *	()
23A. Original documents included in CSF?	(X)	()	()
DC-2	(X)	()	()
DC-1	(X)	()	()
EPA Chain-of-Custody Records	(X)	()	()
Traffic Report/SAS Packing List	(X)	()	()
Shipping Documents (e.g., airbills, hand-delivery of sample receipts)	(X)	()	()
23B. If "NO", does the copy indicate where original documents are located?			
DC-2	()	()	()
DC-1	()	()	()
EPA Chain-of-Custody Records	()	()	()
Traffic Report/SAS Packing List	()	()	()
Shipping Documents	()	()	()

* Requires the initiation of corrective action measures by Regional
Evidence Auditors

COMPLETE SAMPLE DELIVERY GROUP FILE (CSF)
EVIDENCE AUDIT CHECKLIST

Region 6

Audit No. 16008MFN154

EVIDENCE AUDIT CHECKLIST:

Document Control (continued)

24. Auditor Comments:

QUESTION NO.	COMMENTS
_____	_____
_____	_____
_____	_____
_____	_____

DO NOT WRITE IN BOX BELOW

Date Received by CEAT: ____/____/____ Date Entered: ____/____/____

Entered By: _____
(Print Name)

(Signature)

Please copy this form, complete the Evidence Audit Checklist, and
mail the original completed Evidence Audit Checklist to the:

Attn: CSF Evidence Audit Program
Contract Evidence Audit Team (CEAT-TechLaw)
12600 West Colfax Avenue, Suite C-310
Lakewood, CO 80215

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APPENDIX B

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ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 6
First International Bldg., 1201 Elm St.
Dallas, Texas 75270

CHAIN OF CUSTODY RECORD

PROJ. NO.		PROJECT NAME		NO. OF CONTAINERS		REMARKS	
16008							
SAMPLERS: (Signature) <i>Aug. Thayer</i> <i>Michael Watson</i>							
STA. NO.	DATE	TIME	COMP.	GRAB	LOCATION		
S1	3/5/74	09:27		✓		2	6-074069, 6-074070
S2	3/5/74	09:27		✓		1	6-074071
S3	3/5/74	09:27		✓		2	6-074087, 6-074088
S4	3/5/74	10:32		✓	Stream #1	1	6-074089, 6-074090
S5	3/5/74	10:32		✓	Stream #1	2	6-074091, 6-074092
S6	3/5/74	10:32		✓	Stream #1	1	6-074093
S7	3/5/74	10:32		✓	Stream #1	2	6-074094, 6-074095
S8	3/5/74	10:32		✓	Stream #1	1	6-074096
S9	3/5/74	10:32		✓	Stream #1	2	6-074097, 6-074098
S10	3/5/74	10:32		✓	Stream #1	1	6-074099
S11	3/5/74	10:32		✓	Stream #1	2	6-074100, 6-074101
S12	3/5/74	10:32		✓	Stream #1	1	6-074102
S13	3/5/74	10:32		✓	Stream #1	2	6-074103, 6-074104
S14	3/5/74	10:32		✓	Stream #1	1	6-074105
S15	3/5/74	10:32		✓	Stream #1	2	6-074106, 6-074107
S16	3/5/74	10:32		✓	Stream #1	1	6-074108
S17	3/5/74	10:32		✓	Stream #1	2	6-074109, 6-074110
S18	3/5/74	10:32		✓	Stream #1	1	6-074111
S19	3/5/74	10:32		✓	Stream #1	2	6-074112, 6-074113
S20	3/5/74	10:32		✓	Stream #1	1	6-074114
S21	3/5/74	10:32		✓	Stream #1	2	6-074115, 6-074116
S22	3/5/74	10:32		✓	Stream #1	1	6-074117
S23	3/5/74	10:32		✓	Stream #1	2	6-074118, 6-074119
S24	3/5/74	10:32		✓	Stream #1	1	6-074120
S25	3/5/74	10:32		✓	Stream #1	2	6-074121, 6-074122
S26	3/5/74	10:32		✓	Stream #1	1	6-074123
S27	3/5/74	10:32		✓	Stream #1	2	6-074124, 6-074125
S28	3/5/74	10:32		✓	Stream #1	1	6-074126
S29	3/5/74	10:32		✓	Stream #1	2	6-074127, 6-074128
S30	3/5/74	10:32		✓	Stream #1	1	6-074129
S31	3/5/74	10:32		✓	Stream #1	2	6-074130, 6-074131
S32	3/5/74	10:32		✓	Stream #1	1	6-074132
S33	3/5/74	10:32		✓	Stream #1	2	6-074133, 6-074134
S34	3/5/74	10:32		✓	Stream #1	1	6-074135
S35	3/5/74	10:32		✓	Stream #1	2	6-074136, 6-074137
S36	3/5/74	10:32		✓	Stream #1	1	6-074138
S37	3/5/74	10:32		✓	Stream #1	2	6-074139, 6-074140
S38	3/5/74	10:32		✓	Stream #1	1	6-074141
S39	3/5/74	10:32		✓	Stream #1	2	6-074142, 6-074143
S40	3/5/74	10:32		✓	Stream #1	1	6-074144
S41	3/5/74	10:32		✓	Stream #1	2	6-074145, 6-074146
S42	3/5/74	10:32		✓	Stream #1	1	6-074147
S43	3/5/74	10:32		✓	Stream #1	2	6-074148, 6-074149
S44	3/5/74	10:32		✓	Stream #1	1	6-074150
S45	3/5/74	10:32		✓	Stream #1	2	6-074151, 6-074152
S46	3/5/74	10:32		✓	Stream #1	1	6-074153
S47	3/5/74	10:32		✓	Stream #1	2	6-074154, 6-074155
S48	3/5/74	10:32		✓	Stream #1	1	6-074156
S49	3/5/74	10:32		✓	Stream #1	2	6-074157, 6-074158
S50	3/5/74	10:32		✓	Stream #1	1	6-074159
S51	3/5/74	10:32		✓	Stream #1	2	6-074160, 6-074161
S52	3/5/74	10:32		✓	Stream #1	1	6-074162
S53	3/5/74	10:32		✓	Stream #1	2	6-074163, 6-074164
S54	3/5/74	10:32		✓	Stream #1	1	6-074165
S55	3/5/74	10:32		✓	Stream #1	2	6-074166, 6-074167
S56	3/5/74	10:32		✓	Stream #1	1	6-074168
S57	3/5/74	10:32		✓	Stream #1	2	6-074169, 6-074170
S58	3/5/74	10:32		✓	Stream #1	1	6-074171
S59	3/5/74	10:32		✓	Stream #1	2	6-074172, 6-074173
S60	3/5/74	10:32		✓	Stream #1	1	6-074174
S61	3/5/74	10:32		✓	Stream #1	2	6-074175, 6-074176
S62	3/5/74	10:32		✓	Stream #1	1	6-074177
S63	3/5/74	10:32		✓	Stream #1	2	6-074178, 6-074179
S64	3/5/74	10:32		✓	Stream #1	1	6-074180
S65	3/5/74	10:32		✓	Stream #1	2	6-074181, 6-074182
S66	3/5/74	10:32		✓	Stream #1	1	6-074183
S67	3/5/74	10:32		✓	Stream #1	2	6-074184, 6-074185
S68	3/5/74	10:32		✓	Stream #1	1	6-074186
S69	3/5/74	10:32		✓	Stream #1	2	6-074187, 6-074188
S70	3/5/74	10:32		✓	Stream #1	1	6-074189
S71	3/5/74	10:32		✓	Stream #1	2	6-074190, 6-074191
S72	3/5/74	10:32		✓	Stream #1	1	6-074192
S73	3/5/74	10:32		✓	Stream #1	2	6-074193, 6-074194
S74	3/5/74	10:32		✓	Stream #1	1	6-074195
S75	3/5/74	10:32		✓	Stream #1	2	6-074196, 6-074197
S76	3/5/74	10:32		✓	Stream #1	1	6-074198
S77	3/5/74	10:32		✓	Stream #1	2	6-074199, 6-074200
S78	3/5/74	10:32		✓	Stream #1	1	6-074201
S79	3/5/74	10:32		✓	Stream #1	2	6-074202, 6-074203
S80	3/5/74	10:32		✓	Stream #1	1	6-074204
S81	3/5/74	10:32		✓	Stream #1	2	6-074205, 6-074206
S82	3/5/74	10:32		✓	Stream #1	1	6-074207
S83	3/5/74	10:32		✓	Stream #1	2	6-074208, 6-074209
S84	3/5/74	10:32		✓	Stream #1	1	6-074210
S85	3/5/74	10:32		✓	Stream #1	2	6-074211, 6-074212
S86	3/5/74	10:32		✓	Stream #1	1	6-074213
S87	3/5/74	10:32		✓	Stream #1	2	6-074214, 6-074215
S88	3/5/74	10:32		✓	Stream #1	1	6-074216
S89	3/5/74	10:32		✓	Stream #1	2	6-074217, 6-074218
S90	3/5/74	10:32		✓	Stream #1	1	6-074219
S91	3/5/74	10:32		✓	Stream #1	2	6-074220, 6-074221
S92	3/5/74	10:32		✓	Stream #1	1	6-074222
S93	3/5/74	10:32		✓	Stream #1	2	6-074223, 6-074224
S94	3/5/74	10:32		✓	Stream #1	1	6-074225
S95	3/5/74	10:32		✓	Stream #1	2	6-074226, 6-074227
S96	3/5/74	10:32		✓	Stream #1	1	6-074228
S97	3/5/74	10:32		✓	Stream #1	2	6-074229, 6-074230
S98	3/5/74	10:32		✓	Stream #1	1	6-074231
S99	3/5/74	10:32		✓	Stream #1	2	6-074232, 6-074233
S100	3/5/74	10:32		✓	Stream #1	1	6-074234

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ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 6
First International Bldg., 1201 Elm St.
Dallas, Texas 75270

CHAIN OF CUSTODY RECORD

PROJ. NO.		PROJECT NAME		NO. OF CONTAINERS		REMARKS	
PRD 78206975		Cabo Landfill					
SAMPLERS: (Signature) Michael Watson Lennie Dilly							
STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION		
DW1	3/5/91	12:00		✓	R.C. Hanson Well	9	1 1 2 4 1
DW2	3/5/91	12:15		✓	Stan Williams	24	2 2 6 12 2
DW4	3/5/91	8:50		✓	Sherry Scott	9	1 1 2 4 1
DW2	3/5/91	12:15		✓	Stan Williams	24	2 2 6 12 2
						Metals/Residues Cyanide VOCs Extractables pH/Alkalinity	
						G-074097, G-074098, G-074099, G-074100 G-074101, G-074102, G-074103, G-074104, G-074129 G-074137, G-074140, G-074141, G-074142, G-074143, G-074144, G-074145, G-074146, G-074147 G-074105, G-074106, G-074107, G-074108, G-074109, G-074110, G-074111, G-074112, G-074113, G-074114, G-074115, G-074116, G-074117, G-074118, G-074119, G-074120, G-074121, G-074122, G-074123, G-074124, G-074125, G-074126, G-074127, G-074128	
Relinquished by: (Signature) Michael Watson		Date / Time 3/5/91 15:30		Received by: (Signature)		Relinquished by: (Signature)	
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Relinquished by: (Signature)	
Relinquished by: (Signature)		Date / Time		Received for Laboratory by: (Signature)		Date / Time	
						Remarks AIRB.11 6993364523	

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ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

CHAIN OF CUSTODY RECORD

REGION 6
First International Bldg., 1201 Elm St.
Dallas, Texas 75270

PROJ. NO. 16008		PROJECT NAME		NO. OF CONTAINERS		REMARKS	
SAMPLERS: (Signature) <i>Michael Watson</i>		DATE / TIME		LOCATION		ANALYSIS	
STA. NO.	DATE	TIME	CLIP	GRAB	LOCATION	NO. OF CONTAINERS	REMARKS
W1	3/5/91	09:17			Spring - source	2	6-074161 6-074162 FP579
						4	6-074163 6-074164 6-074165 6-074166 FP579
W9	3/5/91	09:23			North Pond	2	6-074193 6-074194 FP583
						4	6-074195 6-074196 6-074197 6-074198 FP583
WL	3/5/91	09:30			North Pond #2	2	6-074201 6-074202 FP584
						4	6-074203 6-074204 6-074205 6-074206 FP584
Relinquished by: (Signature) <i>Michael Watson</i>		Date / Time 3/5/91 1800		Received by: (Signature) Federal Express		Relinquished by: (Signature)	
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Relinquished by: (Signature)	
Relinquished by: (Signature)		Date / Time		Received for Laboratory by: (Signature)		Date / Time	
Relinquished by: (Signature)		Date / Time		Received for Laboratory by: (Signature)		Remarks Federal Express Airtail # 699364534	

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ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

CHAIN OF CUSTODY RECORD

REGION 6
First International Bldg., 1201 Elm St.
Dallas, Texas 75270

PROJ. NO.		PROJECT NAME		NO. OF CONTAINERS		REMARKS	
16008		Michael Watson, Kenneth H. King, Xing Xing		1003 ABN/Pesticide			
STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION		
56	3/6/91	09:45	✓	✓	Point Boundary	3	✓ ✓
57	3/6/91	11:25	✓	✓	Stack Pond	3	✓ ✓
107	3/6/91	11:20	✓	✓	Stack Pond	18	✓ ✓
						G-074070, G-074091, G-074092	
						G-074094, G-074095, G-074096	
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